Santa Fe National Forest Plan

USDA Forest Service
Southwestern Region

Published July 1987

To ensure that your Forest Plan is up-to-date and includes all past amendements and corrections, here is a list of those previously made changes:

FOREST PLAN AMENDMENTS (A) AND CORRECTION NOTICES (CN)

No.	DATE	F.PLAN CHANGE
A1	8/88	Adjusts timber sale schedule; pp. 29-33.
A2	1/89	Updates Wild & Scenic Rivers based on legislation; pg. 55.
A3	5/89	Adjusts timber sale schedule; pp. 29-33.
A4	3/90	Adds approval of electronic site at Pajarito Pk; pg. 85.
A5	10/92	Adjusts a management area boundary, changing acres from C to Q (Jemez District); pp. 47, 106, 161, and map.
CN1	9/94	Adjusts management area boundaries, changing acres from A to B (Pecos District), and from R to I (Jemez District); pp. 47, 98, 102, 135 and map.

- Amendments 1 and 3 can be deleted because activity schedules are no longer required as part of the Forest Plan. Forest Plan Appendix E contains updated activity schedules.

- Replacement pages 55 and 85 for Amendments 2 and 4, and replacement page 47 for Correction Notice 1, are included in this package.

- Other changes made in Amendment 5 and Correction Notice 1 are included in the replacement pages for this amendment (Amendment #6).

SANTA FE NATIONAL FOREST PLAN

FOREST PLAN AMENDMENT #6
OCTOBER 1996

The changes made in this amendment are consistent with those described in the June, 1996 Record of Decision for Amendment of Forest Plans (R3 Amendment). The amendment adds standards and guidelines for managing Mexican spotted owl habitat, northern goshawk habitat, old growth, and livestock grazing. It also includes minor adjustments to the wording of a few other standards and guidelines, eliminates vegetative modification practices tables and forest activity schedules, and adds three new appendices.

Digest:

Page	
ii	Adds Appendices D, E and F to the Table of Contents.
17	Rewords the "Overview" paragraph due to removal of activity schedules (tables 10-14 and 16-20). Replaces activity schedules with Appendix E, Schedule of Proposed Projects, which is routinely updated. Also, removes the outdated Forest Service "Mission" paragraph and replaces it with Appendix F, the current Forest Service mission statement. Maintains the mission statement specific to the Santa Fe National Forest, as part of the "Goals" section of the Plan.
23	Changes content on page 23 to reflect the removal of activity schedules (tables 10-14 and 16-20) from this part of the Forest Plan.
25-33	Removes tables 1-14, containing forest activity schedules. Replaces them with Appendix E, a routinely updated activity schedule.
34	Replaces table 15 "Standard Vegetation Management Practices…" with the revised table from the R3 amendment.
35-46	Removes tables 16-20, containing forest activity schedules. Replaces them with Appendix E, a routinely updated schedule.
56	Adds text to last paragraph, regarding threatened, endangered and sensitive (TES) species habitat.
61	Removes the words "spotted owl" from last paragraph.
62	Adds reference to insert Mexican spotted owl standards and guidelines, contained in Appendix D.
62, 65	Replaces outdated text referring to "diversity units", with new "ecosystem management areas" terminology.
63	Adds reference to insert northern goshawk standards and guidelines, contained in Appendix D.
64	Adds text regarding precedence in applying TES habitat requirements, as seventh paragraph. Removes words "and sensitive" from sixth paragraph.

65	Removes last two paragraphs (outdated) regarding animal damage control.
66	Adds reference to insert livestock grazing standards and guidelines, contained in Appendix D.
68	Removes last paragraph regarding old growth management, which is replaced by new old growth management standards and guidelines on page 69.
69	Replaces entire text regarding old growth management with new old growth management standards and guidelines. Removes a sentence about the preferred method for regenerating stands. Replaces table 23, Old growth management standards and guidelines. Removes a sentence about the preferred method for regenerating stands. Replaces table 23, Old Growth Stand Characterisitcs, with a new table on page 69-A.
71	Changes “firewood harvest” to “econimic evaluation” in sixth paragraph. Moves a paragraph regarding “clearcuts and other regeneration harvests…”, further down on the same page.
72	Replaces the first paragraph regarding uneven-aged management with the revised wording.
74	Replaces “stand” with “resource” in the first paragraph.
95	Inserts text regarding habitat requirements for TES species at end of third paragraph.
140	Removes page 140 and leaves it blank. It was a duplicate of 139.

Pages:	
24, 54, 92, 99, 103, 107, 108, 113, 118, 121, 129, 131, 132, 134, 139, 147, 162, 166, 172,	Removes references to site-specific activities to be implemented during the first decade, associated with the activity schedules in tables 10-14 and 16-20. Those are replaced by Appendix E.

Pages:	
98, 102, 106, 112, 117, 121, 125, 135, 139, 143, 146, 152, 155, 157, 161, 165, 166, 170,	Removes vegetation modification practices tables and text.

Table of Contents

List of Tables

1. Introduction

PURPOSE OF THE PLAN

This plan defines the direction for managing the Santa Fe National Forest for the next 10-15 years. It provides the implementation guidelines for the Preferred Alternative (PA) described in the Final Environmental Impact Statement (FEIS).

The Plan provides for multiple use and sustained yield of goods and services from the Forest in a way that maximizes long-term net public benefits in an environmentally sound manner.

Preparation of the Forest plan is required by the Renewable Resources Planning Act (RPA) (1974), as amended by the National Forest Management Act (NFMA) (1976).

The planning principles in the NFMA regulations [36 CFR 219.1 (b)] were integrated throughout the process. These principles are:

1. Establishment of goals and objectives for multiple-use and sustained-yield management of renewable resources without impairment of the productivity of the land;
2. Consideration of the relative values of all renewable resources, including the relationship of nonrenewable resources, such as minerals, to renewable resources;
3. Recognition that the National Forests are ecosystems and their management for goods and services requires an awareness and consideration of the interrelationships among plants, animals, soil, water, air, and other environmental factors within such ecosystems;
4. Protection and, where appropriate, improvement of the quality of renewable resources;
5. Preservation of important historic, cultural, and natural aspects of our national heritage;
6. Protection and preservation of the inherent right of freedom of American Indians to believe, express, and excerise their traditional religions;
7. Provisions for the safe use and enjoyment of the forest resources by the public;
8. Protection, through ecologically compatible means, of all forest and rangeland resources from depredations by forest and rangeland pests;
9. Coordination with the land and resource planning efforts of other Federal agencies, State and local governments, and Indian tribes;
10. Use of a systematic, interdisciplinary approach to ensure coordination and intergration of planning activities for multiple-use management;
11. Early and frequent public participation;
12. Establishment of quantitative and qualitative standards and guidelines for land and resource planning and management;
13. Management of National Forest System lands in a manner that is sensitive to economic efficiency; and
14. Responsiveness to changing conditions of land and other resources and to changing social and economic demands of the American people.

The Forest Plan replaces all previous resource management plans prepared for the Forest. Upon approval of the Forest Plan, all subsequent activities affecting these lands, including budget proposals, will be based on the Forest Plan [36 CFR 219.10 (e)]. In addition, all permits, contracts, and other instruments for the

use and occupancy of these national Forest System Lands must be consistent with the Forest Plan [36 CFR 219.10 (e)].

Land management prescriptions and standards and guidelines are a statement of the plan's management direction. Activities on the Forest will be directed at achieving the planned future conditions on the land. Projected output, services, and rates of implementation are, however, dependent on the annual budget process. Variation in annual appropriations will be addressed through implementing cost efficiencies, adjusting rates of implementation and scheduling of investments. The quality of projects undertaken will conform to the Plan direction. Implementation schedules can be changed to reflect annual budget and amended accordingly after appropriate public notification.

ORGANIZATION OF THE PROPOSED FOREST PLAN DOCUMENTATION

The remainder of the Forest Plan is organized into Chapters 2 through 5, a Glossary, Appendix A and Appendix B. These contain the following information:

Chapter 2 – This Chapter summarizes the major public issues and concerns. It also describes how the forest Plan addresses these issues and concerns.

Chapter 3 – This Chapter briefly describes some of the projected demands and ability of the Forest to provide various goods and services. It summarizes the Analysis of the Management Situation prepared in 1980 and updated through current computer modeling and more recent information.

Chapter 4 – Chapter 4 describes most of the direction to be followed in implementing the Forest Plan. It includes the mission, the goals statements, and proposed project schedules. In addition, it contains the standards and guidelines for directing activities both forestwide and on specific management areas. A management area map is included with the Plan map package.

Chapter 5 – This chapter contains the monitoring plan. This displays the measures that will be used to evaluate the implementation of the Forest Plan. It will provide information on the progress being made in achieving the goals of the Forest Plan.

Glossary – This is the alphabetical listing of special terms or words used and their definition.

Acronym Index – This is an alphabetical listing of acronyms commonly used in the Plan and the words from which they were formed.

Appendix A – Appendix A lists the activity codes that are used in the Standards and Guidelines in Chapter 4. These codes are used as a key to resource programs and types of activities within these resource programs. For example, F01 is in the soils and watershed resource area (F) and describes inventory activities (01).

Appendix B – This appendix describes the analysis areas used in the planning process. Analysis areas are land areas having similar characteristics which were used to assign acreage to various uses and track the outputs and costs through time.

Appendix C – This appendix displays the timber productivity potential for both those lands that have been classified as suitable for timber production and those that contain timber but are not allocated to or scheduled for timber production in the Forest Plan.

Page 4 is blank.

2. Public Issues and Management Concerns

OVERVIEW

Significant issues have been identified for the Santa Fe National Forest (Forest), Land and Resource Management Plan (Forest Plan). The Forest Plan is designed to respond to the issues as well as to Resource Planning Act (RPA) program objectives assigned to the Forest in the Southwestern Regional Guide.

Issues were identified during the scoping process from such sources as the Regional Guide, solicited public comments, and agency personnel. People made their comments known at a series of public meetings and open houses, and in response to an information booklet/response form mailed to interested and affected people.

Comments were analyzed to identify the most significant issues. Identified issues were then further analyzed and screened to make a list of the final issues that have served to drive the planning process. These issues were then used to develop thirteen planning questions. These questions and how the Forest Plan (Preferred Alternative from the Environmental Impact Statement) responds to them will be discussed in this chapter.

The significant issues, and resulting planning questions, were developed after careful screening to determine whether each Issue was: 1) specifically relevant to the Forest; 2) Forestwide in scope; 3) long-term in duration; 4) within the Regional Forester's authority to resolve; 5) within the Forest's physical and fiscal capability to resolve; and 6) significantly intense based on whether the issue dealt with existing or anticipated conflicts, affected resource management practices, and could show measurable progress toward implementation within the first decade.

ISSUES AND PLANNING QUESTIONS

The Forest Plan responds to issues in specific ways. Chapter 2 briefly discusses each significant issue and describes how the Forest Plan responds to it. For a more thorough discussion of the issues, see the Environmental Impact Statement (EIS) that accompanies this Forest Plan or the technical report titled Public Involvement and ICO Technical Report, available for review in the planning record.

The following are the planning questions associated with the significant issues and how the Forest Plan responds to them:

RECREATION MANAGEMENT

How much, where, and what kinds of each recreation opportunity setting should be provided for devloped and dispersed recreation?

The Forest serves as a setting for many types of recreation, ranging from backpacking or horseback riding in remote areas to downhill skiing with thousands of other people. Some activities require few facilities and result in little contact with people, while others require extensive man-made facilities and have a high degree of human interaction. Because of the differences in peoples' recreation needs, the Forest manages a variety of settings where people can seek the experiences they desire. These settings are described in the Recreation Opportunity Spectrum (ROS) and occur in the amounts shown in Table 1.

Primitive opportunities will occur in the Forest's four wilderness areas. There is concern that too much use in these areas is, or soon will be, degrading the wilderness qualities. Better distribution of use through user education and area management is one part of the solution. Another is the allocation of Semi-Primitive Non-Motorized (SPNM) areas to satisfy the same type of demand.

Table 1. ROS Classes (Acres)

Primitive (P)	292,329
Semi-primitive Non-motorized (SPNM)	163,989
Semi-primitive Motorized (SPM)	575,952
Roaded Natural (RN)	518,211
Rural (R)	1,500
Urban (U)	200

Semi-primitive non-motorized areas will occur across the Forest in a Variety of natural settings in most of the quality unroaded areas which currently exist. There is a sufficient supply of the roaded dispersed opportunities, Semi-Primitive Motorized and Roaded Natural (SPM & RN), across the Forest, although the improvement of some roads will result in a higher quality motorized experience in some areas. Construction or rehabilitation of approximately 20 trailheads, angler and cross country skiing parking areas will also add to the quality of the experience in these areas. The Rural (R) areas shown in Table 1 are the developed sites around the Forest, where the use is quickly approaching capacity. New development and rehabilitation of existing campgrounds and picnic areas will occur to provide increased capacity, solve environmental problems associated with uncontrolled use, and increase management efficiency. This includes development or rehabilitation of approximately 21 sites in the first decade. The Urban (U) areas shown in Table 1 include provision for the expansion of the Santa Fe Ski Area, if the appropriate environmental analysis indicates that expansion is suitable.

---------- 2. ISSUES and CONCERNS ----------

OFF-ROAD VEHICLE USE (ORV)

Which areas of forest should be open, closed, or restricted for off-road vehicle use?

Vehicle use on the land and trails is a recreation experience enjoyed by some people. This use continues to increase especially for motorcycles and all terrain vehicles (ATVs). ORV use damages the environment in some areas and results in conflicts with other Forest users. In other instances, the use is acceptable.

Table 2. Status of Forest Lands for Off-Road Vehicle Use

	Closed or Restricted Acres	Open Acres
- Areas closed	888,558	
- Areas restricted	105,383	
- Areas open		573,240
% of Forest Land	63%	37%

There are over 993,941 acres of the Forest either closed or restricted to ORV use. This figure includes 292,329 acres of wilderness, semi-primitive non-motorized areas, cultural resource areas, important wildlife habitat, slopes over 40%, and areas with sensitive soils or vegetation. Table 2 summarizes the acres of open, closed and restricted to ORV use.

VISUAL QUALITY

On which lands will each Visual Qulaity Objective (VQO) Occur?

All lands within the Forest are managed to achieve some level of visual, or scenic quality. The standards to which they are managed are defined as Visual Quality Objectives (VQO's) for each area.

All wilderness and Research Natural Areas, along with the Santa Fe municipal watershed, will have a VQO of Preservation (P). Areas viewed in the foreground from communities, recreation areas, and high use roads and water bodies, as well as scenic backdrops from these areas, will have an objective of Retention. There, management activities will not be visually evident within one year of project completion. Timber activities will be designed to promote diversity and the scenic characteristics of the forest. Backdrops of less scenic quality or lands viewed in the foreground from lower use areas have a VQO of Partial Retention. Here, activities may be evident, but must remain subordinate to the characteristics of the landscape. Other areas, containing minimal scenic variety or seldom seen from common use areas, have objectivies which permit a more managed appearing forest while retaining some qualities of naturalness.

---------- 2. ISSUES and CONCERNS ----------

CULTURAL RESOURCE MANAGEMENT

How will the cultural resources be managed in the Forest?

Cultural resource management will include an active program of inventory, nomination, protection, and restoration, as well as interpretation and research, as appropriate. Nearly 38,000 acres will be allocated specifically to cultural resource management, excluding major land disturbing activities. Nomination, interpreation, and research will be focussed, but not occur exclusively, in these areas. Outside of these areas, inventory and site marking will be at sufficient level to protect sites from other resource activities, and the amount of inventory will exceed that needed solely for project accomplishment. Average annual accomplishments for the Forest will be:

- 6 damaged sites restored yearly
- 4 sites/areas nominated to National Register yearly
- 34 sites patrolled for vandalism
- 9,000 acres of project related site identification yearly
- 16,700 acres of inventory survey yearly

The above rate of inventory will complete the Forest inventory within 30 years.

WILDLIFE MANAGEMENT

How much area should receive special emphasis for wildlife habitat mangement?

The Forest Plan provides a wide array of emphasis for wildlife, which varies by Management Area. There are 19,275 acres of land allocated specifically for Threatened and Endangered (T&E) species. A total of 174,275 acres will receive 475,429 acres of high wildlife emphasis. The Table 3 displays the management areas and acreage which receive similar qualitative wildlife emphasis in the plan.

In addition to these allocations, increases in the acres of direct and indirect habitat improvement will result from the plan. These specific projects will positively affect the quality, distribution and diversity of habitats through such means as road closures, retention of old growth and other key habitats, increased use of uneven aged timber management, and other activities.

Table 3. Wildlife Allocation Emphasis by Management Area

Wildlife Emphasis	Management Area	Acres	Wildlife Emphasis	Management Area	Acres
Very High Emphasis	C	89,819	High Emphasis	B	61,888
	K	65,181		G	226,992
	N	19,275		R	146,021
		174,275		S	40,528
					475,429
Moderate Emphasis	A	270,342	Subordinate Emphasis	H	292,329
	D	53,038		J	17,148
	E	119,833		L	100,683
	P	30,557		M	1,440
	Q	17,107		O	15,000
		490,877			426,600

WILDLIFE HABITAT DIVERSITY

How much wildlife habitat diversity through time should be provided?

Diversity is described in two forms, horizontal diversity and vertical diversity. Horizontal diversity comes primarily from the distribution across the Forest of different plan communities and different ages (seral stages). For wildlife habitat, it is desirable to have high horizontal diversity with a good mix of early, middle and late seral stages. Vertical diversity occurs within a plant community and seral stage and refers to the number of canopy layers and complexity of vetgetation above the ground. Wildlife habitat is of a higher quality if it has higher vertical diversity.

The plan will lead to increased horizontal diversity in forested areas over what currently exists. This change will occur primarily through timber harvest, planned and executed under integrated stand management. In the ten years of this plan, there are 94,974 acres which will be managed with even age methods. These areas will lose some of their vertical diversity, but increase their horizontal diversity. Table 4 shows the Diversity Emphasis for the forested areas.

In the forested lands 612,633 acres will be managed to maintain their inherent vertical diversity. This is comprised of 37% in wilderness, 29% in areas which are unsuitable because of slope or low productivity and 34% which have been allocated to Research Natural Areas, Watersheds, or Threatened and Endangered Species habitat. An additional 11,290 acres of timberland will be managed with uneven age harvest systems and will maintain a moderate amount of their vertical diversity.

Table 4. Diversity Emphasis by Forested and Woodland Communities (Acres)

MONTANE FORESTED COMMUNITIES

Allocation	High Vertical Diversity	Moderate Vertical Diversity	High Horizontal Diversity
Wilderness	230,138		
Unsuitable	201,143		
Other Allocations	181,352		
Suitable Timberland		45,160	303,255
	612,633	45,160	303,255

WOODLAND COMMUNITIES

Allocation	High Vertical Diversity	High Horizontal Diversity
Wilderness	32,675	
Other Allocations	347,495	
Firewood Allocations		111,000
	380,170	111,000

In the woodland communities (such as Pinyon-Juniper) there are 380,168 acres which will be managed to maintain their inherent vertical diversity. This is comprised of a small amount of wilderness and the remainder allocated to prescriptions without firewood harvest. There are 110,000 acres allocated to firewood harvest, which will be the chief tool used to create horizontal diversity in the woodland communities. These areas will have less vertical diversity and increased horizontal diversity.

RANGE MANAGEMENT

When will grazing use balance with capacity within acceptable social, economic, and environmental constraints?

Current livestock use exceeds production capability on some allotments. Opportunities exist to increase production capacity and reduce conflicts with other resources.

The Plan will improve the capacity for forage production of the Forest through development and implementation of allotment management plans by the end of the first decade. These plans are developed cooperatively with permittees to guide grazing use on specific portions of the Forest. By applying improved grazing systems, range developments, salt management, range riders and other techniques, individual allotments will be at or trending toward balancing capacity and use in the first decade. All alotments will have management plans by the end of the first decade.

If allotment management plans are unable to establish the trend toward balancing use and capacity on an individual allotment, other methods will be applied. These would include transferring permitted livestock from overstocked allotments to selected understocked allotments and direct reductions in permitted use.

On a forestwide basis permitted use is expected to remain approximately the same at 94,100 AUM's for cattle and 3,200 AUM's for outfitters and guides. Variation in individual allotments will occur with application of improved grazing management or adjustments.

TIMBER MANAGEMENT

How much and what kinds of timber should be harvested?

Opportunities exist to fully institute an integrated resource management approach to timber harvest and salvage activities. By using the integrated stand management approach to timber sale planning, as well as techniques such as integrated pest management, the Santa Fe National Forest can achieve project specific objectives for all resources. At the same time, sawtimber and other product yields can be maintained at or above historic annual sell levels.

Approximately 529,767 acres of land were determined to be tentatively suitable for timber harvest. During this plan's life, 348,415 acres of land will be managed for long-term timber production. This is the suitable base for timber production for this plan. Of this total base, 106,264 acres are scheduled for treatment in the first decade.

The primary focus of this plan is to integrate wildlife, cultural resources, visual quality, economics, water quality, wood-fiber production and other resource needs into a program that closely adheres to both the management area and forest wide standards and guidelines. Many resource objectives can be accomplished through coordinated timber management activities.

Table 5. Average Annual Allowable Sale Quantity (MMBF) for First Decade

Sawtimber	39.0	MMBF
Products	6.5	MMBF
TOTAL	45.5	MMBF

During the life of this plan, Table 5 shows the volumes scheduled and sold to accomplish the objectives described above. Table 6 shows the sale size and harvest method for the allowable sale quantity (ASQ).

Table 6. Sawtimber Programs and Harvest Method

Sale Site	Harvest Method	Volume
Large (> 1 MMBF)	Tractor (<40% sideslope)	35.0 MMBF
Small Salvage	Tractor (<40% sideslope)	2.5 MMBF
Large (> 1 MMBF)	*Skyline (>40% sideslope)	1.5 MMBF

*This will be on a monitored demonstration basis.

FIREWOOD

How much and what kinds of firewood will be available?

The demand for firewood is increasing rapidly resulting in unauthorized roads and illegal cutting in some areas. The supply of green pinyon-juniper (P-J) firewood has been reduced from 7,000 cords/year to 4,600 cords/year for personal use. This reduction is necessary to bring the green pinyon-juniper under a 300 year rotation age and sustain a long-term supply. To offset this reduction of available green pinyon-juniper, personal use of other species, logging debris and other dead-and-down woody material will be made available. Table 7 sows the firewood volume by type.

Table 7. Average Annual Firewood Production (MMBF) by Firewood Type

Firewood Type	Proposed Action
Logging Slash	6.8 MMBF
T.S.I Slash	0.2 MMBF
Green PJ	2.3 MMBF
Total Volume	9.3 MMBF

NOTE: 1MBF - 2 Cords or 1 MMBF - 2,000 Cords

WATERSHED MANAGEMENT

How will planned levels of management affect the soil and water resource?

Demands for water are of paramount interest in the arid Southwest. Forest management activities have potential to significantly alter water quality and soil productivity. Currently, eleven percent of the Forest is classified as unsatisfactory watershed condition. These acres currently have ground cover conditions that are less than the minimum cover necessary to maintain soil capability or hydrologic function.

Protection of water quality and soil productivity during earth disturbing activities will be assured through the use of management practices designed to safeguard these resources. These special practices are designed specifically for each project. The Forest Plan will improve much of the unsatisfactory watershed condition by improving vegetative conditions. In addition, the plan provides opportunities to restrict vehicle use in areas of sensitive soils or essential wildlife habitat. Livestock impacts on soil and water quality will be reduced due to improved range management. Riparian areas will also be enhanced through direct improvement projects.

SANTA FE WATERSHED

Should the Santa Fe Watershed be opened and the Order of the Secretary of Agriculture, signed in 1932 be lifted?

The Santa Fe Watershed was closed to all uses through a Secretary of Agricultures's order in 1932 to protect the watershed from fire and stream pollution. The Forest Plan will keep the watershed, including the Pecos Wilderness portion, closed while allowing an opportunity to study the issue.

TRANSPORTATION SYSTEM

What roads, trails, and other facilities are necessary for the management and use of the forest resources and how will they be managed?

The transportation system is developed to serve resource management needs. The existing road system has many major access routes in a poor condition. These roads are currently inadequate to serve the land management needs of the Forest. The Plan proposes to construct 9.5 miles per year and reconstruct 71.5 miles per year, improving the drainage and surface of major access roads.

Table 8 summarizes the road system of the Forest Plan.

Table 8. Road Summary for First Ten Years

		Total Miles
Current Inventory		3,400
Existing Un-inventoried	(+)	1,000
New Construction	(+)	95
Obliteration	(-)	660
		3,835
Road Management Closures	(-)	2,035
Roads Open to Use		1,800

The existing road system contains many miles of local roads that are in poor condition. Many of these roads are unneeded for current management, and in fact are impacting wildlife habitat, water quality, and other resources. The Plan emphasizes road management, where unneeded roads will be closed to use between management activities. An estimated 660 miles of unneeded roads will be seeded and closed permanently.

The trail system provides access for much of the dispersed recreation that occurs on the Forest. Currently many miles are in need of reconstruction for relocation. In addition, a number of miles of connecting trails need to be constructed. The trail system will be significantly improved through an increase in maintenance as well as 16 miles/year of construction and reconstruction. Motorized and non-motorized use will be managed to reduce user conflicts and support management area objectives.

RESEARCH NATURAL AREAS

What will be the Forests' contribution to the Southwestern Research Natural Area (RNA) system?

Opportunities have been identified to provide areas for scientific study and protection through establishment of Research Natural Areas. The Forest currently has the Monument Canyon RNA identified (640 Acres for the study of the Ponderosa Pine type.

The Forest Plan identifies two additional RNA's for future research that display unique characteristics in woodland and grassland ecosystems. They are:

Canada Bonito (Thurber fescue)	300 acres
Mesita de las Ladrones (Juniper savannah)	500 acres

3. Summary of the Analysis of the Management Situation

OVERVIEW

An Analysis of the Mnagement Situation (AMS) was prepared and documented in 1980 as a means of determining the productive capacity of the Forest to supply various goods and services. The AMS is summarized in detail in Chapter 3 of the EIS. The Affected Environment. Copies of the AMS are available in the planning record. The AMS is incorporated by reference for purposes of analysis in the EIS and Forest Plan.

Supply and projected demand for various goods and services have been analyzed to identify necessary improvements, resolve the issues, and prevent future conflict. The goal of the Forest Plan is to identify the level and type of Forest uses that would help meet projected demand while enhancing or maintaining resources in a cost effective, integrated manner.

Table 9 summarizes the key outputs from the AMS. The table depicts the current goods and services produced and projects potential supply and demand.

Table 9. Comparison of the Key Outputs with Potential Supply and Projected Demand

RESOURCE OUTPUT	AVERAGE ANNUAL UNIT OF MEASURE	FOREST PLAN		POTENTIAL SUPPLY		PROJECTED DEMAND	
		DECADE 1	DECADE 5	DECADE 1	DECADE 5	DECADE 1	DECADE 5
WILDERNESS RECREATION	MRVD	168	364	168	365	168	365
DEVELOPED RECREATION	MRVD	863	1394	1248	1903	884	1679
DISPERSED RECREATION	MRVD	885	1700	885	1700	885	1700
WILDLIFE RECREATION	MWFVD	294	321	365	401	406	712
GRAZING CAPACITY	MAUM	97	118	106	138	106	138
PERMITTED USE	MAUM	96	108	106	138	106	138
SAWTIMBER SALES	MMBF	39	53	86	118	39	60
PRODUCTS	MMBF	6.5	1.4	18.0	1.9	4.0	5.0
FIREWOOD (SOLD & FREE-USE)	MMBF	9.3	9.9	12.0	12.5	9.0	13.0

Wilderness recreation use will meet projected demand through Decade 5. Dispersed recreation will meet projected demand in Decades 1 and 5. Developed recreation, on the other hand, falls short of meeting projected demand throughout the planning schedule. However, demand for developed recreation can also be met by private or other public facilities that are off the National Forest. The potential supply as well as the forest plan outputs for wildlife recreation will not meet the projected demand in Decades 1 through 5. The inability to meet this demand is determined by the limited capacity of the forest to produce wildlife and fish.

Grazing capacity will be improved through development and implementation of allotment management plans. By applying improved grazing systems, range developments, salt management, range riders, reduction or adjustment, and other techniques, individual grazing allotments will be trending toward balancing capacity and use in the first decade.

Table 9 shows that the Forest has the capability of supplying sawtimber and products to meet projected demand. The amount scheduled for harvest of sawtimber in the Forest Plan falls below the projected demand in both Decades 1 and 5. Currently, the Forest is capable of producing more products in the four to nine inch class than is being demanded. Products such as posts, poles, and vigas will continue to be in demand. This demand will be met. The potential supply for all products is high enough that all demand can be met if demand increases.

The projected firewood demand is estimated to continue to remain high. This demand exceeds the supply potential of green Pinyon-Juniper, which is based on sustained yield levels at 2.3 mmbf per year. However, the demand for firewood in Decade 1 through 5 will be supplied from alternate wood sources such as logging and thinning slash and green species other than Pinyon and Juniper.

----------4. MANAGEMENT DIRECTION----------

OVERVIEW

Chapter 4 contains the management direction for the Santa Fe National Forest [Forest]. It begins with the overall Forest-wide goals, which are consistent with the mission, vision and guiding principles of the Forest Service are contained in Appendix F. Tables showing estimated outputs follow. Management activities, or projects expected to be implemented, are listed in a separate document called the Schedule of Proposed Projects, listed as Appendix E of the Forest Plan. The Schedule of Proposed Projects (Appendix E) is updated and distributed to the public several times each year. The majority of this chapter describes the forest-wide standards and guidelines for managing forest resources.

GOALS

Goals for the Santa Fe National Forest include the Forest Service mission, vision, and guiding principles common to all National Forests in the United States. In the unique cultural environment of northern New Mexico, however, our mission or goal also includes:

- contributions to the economic and social needs of the people of northern New Mexico;
- strengthening of the rural economy of the region and encouraging the enrichment of traditional cultural values;
- maintaining among all Forest Service personnel an awareness of the degree to which local people in rural communities rely on the National Forest for a social, religious, and economic base;
- recognition that the way of life of many rural residents is, and will continue to be, directly affected by the management of Forest lands;
- identification, protection, and maintenance of the historical, cultural and religious sites found within the Forest; and
- understanding of the importance of access to those sites for Native American people.

Goals include concise statements that describe a desired condition to be achieved sometime in the future. They are the end results toward which this Plan is directed.

The Forest is initiating a management direction that will respond to local and national demands for wood products, livestock production, water yield and quality, and a wide mix of recreation opportunities, including hunting and fishing. The goal is to provide these services, outputs, and opportunities on a sustained basis while maintaining the quality of air, soil, and water resources. Levels of outputs and uses are adjusted to be within long-term supply potentials, and to ensure the harmonious and coordinated management of all resources without impairing the productivity of the land. Nonrenewable resources are adequately protected to ensure their future availability.

The goal statements for each resource element follow:

Recreation

Manage the recreation resource to increase opportunities for a wide variety of developed and dispersed experiences. Provide for developed sites and dispersed visitor use, including handicap access.

Coordinate with the New Mexico Natural Resource Department to contribute to goals and objectives specified in the State Comprehensive Outdoor Recreation Plan (SCORP).

Provide visitor information services (VIS) to interpret the resources, uses, and management of the Forest.

Provide and maintain a variety of Forest trails, consistent with planned recreation opportunities. Include foot, horse, winter, and motorized trails, as well as opportunities for the handicapped.

Continue to integrate the Recreation Opportunity Spectrum (ROS) system into the Forest planning process to quantify recreation opportunity changes, guide management, and coordinate recreation with other resources.

Establish Off-Road Vehicle (ORV) use areas and closures as needed to provide ORV opportunities while protecting resources and minimizing conflicts with other users.

Visual Resources

Maintain and enhance visual resource values by including visual quality objectives in resource planning and management activities, and designing projects to meet these objectives.

Cultural Resources

Inventory, protect, evaluate, nominate, interpret, and enhance cultural resources. Coordinate planning for these activities with the State Historic Preservation Office, other State and Federal agencies, and Native American groups.

Wilderness

Provide a wilderness management program that achieves the intent of the Wilderness Act of 1964.

Maintain enduring, high quality wilderness values while providing for quality wilderness recreation experiences.

Allow wildfire to play a natural role.

Protect air quality related values in Class I wilderness areas.

Wild & Scenic Rivers

Manage the three rivers recommended for inclusion in the National Wild & Scenic Rivers System to maintain or enhance the values for which they were included. Maintain the rivers' free-flowing character while providing quality water-based recreation opportunities, wildlife habitat improvement, and other resource management, consistent with the intent of the 1968 Wild & Scenic Rivers Act.

Wildlife and Fish

Manage habitat to maintain viable populations of wildlife and fish species and improve habitat for selected species. Coordinate habitat management with other resource activities.

Cooperate with the New Mexico Department of Game and Fish to contribute toward management goals and objectives specified in the State Comprehensive Plan.

Identify, protect and enhance habitat that contains threatened, endangered, and sensitive species of plants and animals to contribute toward the goal of species recovery.

Increase opportunities for wildlife and fish oriented recreation activities.

Range

Cooperate with private ranch owners and other agencies to develop coordinated range management systems of livestock grazing to balance permitted use and grazing capacity.

Provide a program of range management that emphasizes high quality range forage

and improvements.

Timber

Utilize integrated stand management on all forested lands identified as suitable for commercial timber production. Timber management planning activities will integrate considerations for water quality, soil productivity, economics, site productivity, visual quality and any other resource value that is appropriate to the area being considered for harvest or salvage activities.

Apply integrated stand management not only to sawtimber harvest, but also to forest product harvest (small dimension material, vigas, latillas, Christmas trees, and posts), timber stand improvement, and reforestation activities.

Utilize small sales to sanitize stands and salvage timber. These sales will be targeted for the smaller logging and manufacturing interests in local communities.

Develop a sustained yield program for firewood and implement it through integrated stand management. Shift program emphasis away from the use of green pinyon as the primary firewood. Allow harvest of green pinyon only within the productive capabilities of the species. Emphasize logging slash and other down materials to meet the demand for firewood.

Soil and Water

Provide direction and support to all resource management activities with emphasis on maintaining the soil resource, water quality and water quantity.

Manage for a favorable flow of water for users by improving or maintaining all watersheds to a satisfactory condition.

Maintain water quality to meet or exceed state water quality standards.

Identify and protect wetlands and floodplains.

Riparian

Achieve satisfactory condition in riparian ecosystems. Maintain areas that are currently in good condition.

Minimize disturbances due to resource activities and other uses in the riparian zone.

Cooperate with New Mexico Department of Game and Fish to achieve management goals and objectives for fisheries and riparian habitat.

Research Natural Areas (RNA's)

Manage RNA's for scientific research or baseline studies. Protect potential RNA's pending acceptance to the RNA system.

Special Interest Areas (SIA's)

Manage Special Interest Areas to interpret their unique values for the public in a manner which protects these values.

Support a process to evaluate and designate areas which contribute to the Special Interest Area program.

Minerals

Support sound energy and minerals exploration and development, where appropriate. Administer the mineral laws and regulations to minimize adverse surface resource impacts.

Lands

Consolidate landownership for improved management efficiency through land exchange, purchase, or donation.

Acquire the road and trail rights-of-way needed to manage Forest resources.

Identify, post and perpetuate National Forest boundaries

Resolve unauthorized occupancy and trespass situations.

Administer special uses to best meet public needs.

Minimize the number of electronic sites and utility corridors by allowing only those that are most appropriately located on Forest lands. Utilize existing corridors whenever possible from a need and resource management standpoint.

Facilities

Provide and manage a transportation system that meets needs for public access, land management, resource protection, user safety, and cost effectiveness.

Close or obliterate unnecessary roads.

Provide buildings, communication and other facilities to meet administrative and public service needs, including handicap access.

Provide water and sewage systems to meet federal and state pollution abatement standards.

Fire Management

Protect life and property from wildfire.

Protect forest resources from wildfire at a level commensurate with the value of the resource.

Utilize prescribed fire as a tool where it can effectively accomplish resource management objectives.

Law Enforcement

Protect natural resources and Federal property from loss or damage through illegal acts.

Provide safety for Forest visitors through the use and enforcement of appropriate laws, closures, or other management techniques.

Cooperate with State and local law enforcement agencies to properly protect forest resources, employees, visitors, and property.

Insect and Disease Management

Through integrated pest management (I.P.M.), manage affected forest resources to minimize the likelihood of unacceptable outbreak conditions of insects and diseases.

Reduce the potential effects of common pests such as dwarf mistletoe and Western Spruce Budworm through sound silvicultural treatments.

Give priority to early detection and management of stands highly susceptible to infection or infestation.

Public Involvement

Provide information about Forest management to interested people. Openly and actively involve the public in planning processes.

Social and Economic

Manage Forest activities and programs within the capability of the land while recognizing the value of maintaining the traditional cultures of northern New Mexico.

Manage human resource programs to provide employment, employee well-being, and economic opportunities to communities while meeting natural resource goals.

Land Management Planning

Provide coordination and ensure interdisciplinary input for implementing, monitoring, and updating the Forest Plan.

OBJECTIVES

An objective is defined as "a concise, time-specific statement of measurable, planned results that responds to pre-established goals" [36 CFR 219.3]. Forest objectives are intended to be completed in a given time and with a given budget level. The objectives promote realization of the agency's mission, vision and guiding principles [Forest Service Manual 1020, 1021].

Objectives can influence the output levels for selected resources, however, the variability in output levels depends more on changes in budget appropriations from Congress, as well as other politically made policy decisions (see Appendix B of the EIS).

The scheduling of Forest management activities is displayed in the Schedule of Proposed Projects for the Santa Fe National Forest, updated and published regularly as Appendix E of the Forest Plan.

Table 10. Forest Plan Outputs
in Average Annual Units By Resource in Decade 1

Resource	Annual Proposed Outputs
Developed Recreation (MRVD)	863
Dispersed Recreation (MRVD)	885
Wilderness Recreation (MRVD)	168
Wildlife Recreation (MRVD)	294
Permitted Grazing Use (MAUM)	96
Net Sawtimber (MMBF)	39.0
Net Products (MMBF)	6.5
Long Term Sustained Yield (MMBF)	17.7
Firewood (M Cords)	18.4
Water Yield (M Acre-feet)	434

Table 11. Land Classification Suitability

Land Type		Montane	Woodland	Total	
Total National Forest Land		-	-	1,567,181	
Non-Forested Land				114,963	*
Forested Land		961,048	491,170	1,452,218	
	Wilderness	230,138	32,675	262,813	
	Unsuitable	201,143	458,495	659,638	
Tentatively suitable		529,767	0	529,767	
Not Appropriate		181,352	0	181,352	
Total Suitable		348,415	0	348,415	

*includes 29,019 acres of wilderness lands

TABLES 10-14 AND 16-20 HAVE BEEN DELETED. TABLE 15 HAS BEEN REPLACED (ON PAGE 34).

Standard Vegetation Treatment Table

Standard Vegetative Management Practices for Certain Composition, Structure, and Function Attributes (use at the site/stand level).

Composition (Forest Type*)	Aspen and Western Live Oak	Engelmann Spruce-Subalpine Fir, White Fir, Blue Spruce, Limber Pine, Rocky Mountain Juniper, Cottonwood-willow, Interior Ponderosa Pine, Pinyon-Juniper, Arizona Cypress, and Mesquite							All Forest Types	Grass-Land, Meadow, and Alpine
STRUCTURE	DESIRED ONE-AGED, SINGLE-STORIED STAND (One-age class comprises >= 90% of total stand BA for most of the rotation. Age difference between oldest and youngest tree in a class is less than 20% of the rotation)				DESIRED TWO-AGED, TWO STORIED STAND (Two age classes, each > 10% BA most of rotation)	DESIRED UNEVEN-AGED, MULTI-STORIED STAND (More than two age classes)			ANY DESIRED ONE-, TWO-, OR MULTI-STORIED STAND	OPEN
FUNCTION	Coppice Regeneration Method (vegetative regeneration function)	Clearcutting Regeneration Method (no trees function for seed/shelter)	Seed Tree Regeneration Method (some trees function for seed only)	Shelterwood Regeneration Method (some trees function for seed/shelter)	Irregular Shelterwood Regeneration Method (function for continuous tree cover)	Single-Tree Selection Regeneration Method (function for continuous tree cover)	Group-Selection Regeneration Method (group size <= 2 TO 4 acres)	Irregular Group Shelterwood Regeneration Method Method	Intermediate Treatment Methods (tree cover between stand formation and regeneration)	No or Few Trees (maintain open)
VEGETATIVE MANAGEMENT PRACTICE	Activity Coppice Coppice w/Reserves	Activity <= 5% tree cover post harvest: Patch cut Strip cut Stand cut 6-10% tree cover post harvest: Patch cut w/Reserves Strip cut w/Reserves Stand cut w/Reserves	Activity Preparatory Seed 1-10% tree cover post harvest: Final Removal Final Removal w/Reserves	Activity Preparatory Seed Group Seed Strip Seed Removal Group Removal Strip Removal Final Removal Final Removal w/Reserves	Activity Preparatory Seed Removal Final Removal Final Removal w/Reserves Coppice Regeneration Method Coppice w/Standards (understory must regenerate vegetatively, suckers/sprouts)	Activity Single Tree/ (individual-Tree) Selection	Activity Group-Selection Group-Selection w/Reserves	Activity Seed Removal Final Removal Final Removal w/Reserves	Activity Improvement Liberation Thinning Commercial & Noncommercial Mortality Salvage Sanitation Salvage Cull Salvage Prescribed Fire Cleaning Weeding	Activity Meadow Main-tenance & creation

*Eyre, F.H. 1980. Forest cover types of the United States and Canada. Society of American Foresters, Washington, D.C. 148 P.

MANAGEMENT PRESCRIPTIONS

Mission, goals, and objectives for the Forest are realized by applying groups of management activities to specific units of land. Groups of management activities are called “Prescriptions” and the land units are called “Management Areas.” This portion of the Forest Plan describes which prescriptions are applied to which management areas.

Prescriptions are management practices selected and scheduled to apply to a specific area to attain multiple use and other goals and objectives [36 CFR 219.3(u)]. A management area is a unit of land where a given prescription is to be applied. These areas are displayed on the Management Area Map accompanying this Forest Plan, and are indexed in the following table:

Table 21. Management Area Index

Management Area	Management Emphasis	Acres		Page
A	Timber / Wildlife	263,107		98
B	Wildlife / Timber	69,123		102
C	Recreation - Visual - T&E Species / Timber	88,487		106
D	Recreation - Visual / Timber	53,038		112
E	Dispersed Recreation - Visual - Timber	119,833		117
G	Wildlife - Range - Firewood	226,992		121
H	Wilderness	292,329		125
I	Cultural Resources	38,957	*	135
J	Gallinas Creek Watershed	17,148		140
K	Sensitive Soils - Species	65,181		143
L	Semi-Primitive Non-Motorized Recreation	100,683		146
M	Research Natural Areas	1,440		150
N	T&E Species Habitat	19,275		152
O	Santa Fe Watershed	15,000		155
P	Cultural Resources - Timber / Wildlife	30,557		157
Q	Cultural Resources - Dispersed Recreation - Visual - Timber	18,439		161
R	Cultural Resources - Wildlife / Timber	144,984		165
S	Cultural Resources - Wildlife - Range - Firewood	40,528		170

* This management area is not shown on the Management Area Map. It overlays the existing management areas, superceding their standards and guidelines. Because of the overlay, the acres are not combined in the total Forest acres.

Prescriptions for each management area integrate resource and support activities to define environmental quality and output levels. Each prescription has the components listed below.

Management Area Description	Includes a brief description of the physical, biological, and administrative characterisitics of the management area to which the prescription applies.
Management Emphasis	This summarizes the management direction for the management area and highlights some of the most important direction.
Management Information Handbook (MIH) Activity Code	A list of resource management activities appplicable to management practices. These activities are grouped into resource or support elements and are identified by alpha/numeric codes such as A01 or D02. Each activitity has a unique code, title, and unit of measure for the work performed. An index is provided in Appendix A.
Standards and Guidelines	Standards and guidelines direct the timing, intensity, and quality of planned activities, specific policies that apply to activities in each prescription, and mitigation measures and coordinating requirements needed to protect resources and the environment. There are two categories of standards and guidelines: Forestwide and management area standards and guidelines. Forestwide standards and guidelines apply to all management areas on the Forest. The management area standards and guidelines are specific to the management area.
How to Apply the Prescriptions	To apply the prescriptions to proposed activities: 1. Be familiar with the Forestwide standards and guidelines, since they apply to all management areas; 2. Review the Forestwide standards and guidelines for the primary resource activitiy when beginning project scoping; 3. Check the standards and guidelines for those associated resources or concerns identified in the scoping process; 4. Once this review is complete, locate the activity on management and analysis area maps and field check the location to determine the applicable standards and guidelines to be met. 5. Determine the suitability of applying the activity at that specific location. An environmental analysis and evaluation must be conducted on all proposed projects to determine consistency with the prescription and applicability of the standards and guidelines. The responsible official will determine the appropriate level of environmental documentation. Any additional management constraints not covered by the standards and guidelines in the plan are determined at this time. If the proposed activity is not appropriate for a specific site because of land suitability or other conflicts with standards and guidelines, the planned action will be redesigned or relocated. Major unforseen practicies or activities which cannot be changed and which conflict with the plan may result in an amendment or revision. Amendments or revisions are accomplished by the Forest Supervisor after appropriate public notification [36 CFR 219.10 (f)].

PLAN AMENDMENT and REVISION

Amendments

The Forest Supervisor may amend the Forest Plan for various reasons including changed conditions, new technology, emerging events, or new information.

During implementation of the Forest Plan, market conditions or resource use demands may change. Opportunities brought about by these changes can be incorporated in the Forest Plan through amendments. For example, if markets and subsequent demand for wood products were to increase, the Forest Supervisor may amend the Plan. It may be determined that an increase in the allowable sale quantity for the 10 to 15 year duration of the Forest Plan would be possible within the direction of the Plan. Such an increase could require scheduling additional land for timber production. For another example, Forestwide or Management Area direction may require changes for clarification or improvement.

If change resulting from the amendment is not significant for the purposes of the planning process, the Forest Supervisor may implement the amendment following appropriate public notification, the Forest Supervisor will allow at least 30 days for public response before implementing an amendment. However, if the change resulting from the proposed amendment is determined to be significiant, the Forest Supervisor shall follow the same procedure as that required for the development and approval of a forest plan.

Revision

A Forest Plan shall ordinarily be revised on a 10 year cycle, or at least every 15 years. It also may be revised whenever the Forest Supervisor determines that conditions or demands in the area covered by the Plan have changed significantly or when changes in RPA policies, goals or objectives would have a significant effect on Forest programs. In the monitoring and evaluation process, revisions may be recommended at any time. Revisions are not effective until considered and approved in accordance with the requirements for the development and approval of a Forest Plan. The Forest Supervisor shall review the Plan at least every five years to determine whether conditions on the land or the demands of the public have changed significantly. The Forest Plan will be revised when necessary, but no later than the year 2002.

FORESTWIDE
STANDARDS AND GUIDELINES — The following standards and guidelines apply to all management areas on the Forest.

PROGRAM ELEMENT	ACTIVITY MIB CODE	FORESTWIDE STANDARDS AND GUIDELINES
RECREATION VISUAL, CULTURAL RESOURCES	A01	RECREATION Coordinate interpretive services with adjacent National Forests, local Native American leaders, and other natural resource agencies. Manage Special Interest Areas to interpret their unique values for the public in a manner which protects these values. Support a process to evaluate and administratively designate areas which contribute to the Special Interest Area program. Evaluate Canones Creek, Pajarito Canyon, Oaks Mesa Soda Dam, and other potential areas for their possible contribution as Special Interest Areas. Assess suitability of at least five trails and nominate as appropriate to the National Recreation Trail system in the first decade. Prepare sign plans on each Ranger District within the first decade to facilitate visitor use, enjoyment, and understanding of National Forest activities. The Recreation Opportunity Spectrum (ROS) concept will be used in trail planning to ensure that a suitable diversity of recreation opportunities are served by the trail system. Continue cooperative planning with other Forests, Federal, State, County, tribal, and local goverment agencies to coordinate Forest recreation management.
	A02	Maintain Recreation Opportunity Spectrum (ROS) class inventory (1984) as changes occur on a project basis. Refine and update the Forest trail inventory in the first decade to identify condition, difficulty levels, and maintenance and reconstruction needs, in accordance with FSH 2309.18.
	A05 A06	Provide for handicapped access in new recreation site construction and reconstruction. The goal is to have all interpretive facilities and at least 20% of developed recreation site capacity fully accessible to the handicapped. Evaluate the suitability for barrier-free use in all rehabilitation and construction projects in order to achieve this goal.

FORESTWIDE

A06 Projects implemented within potential recreation sites will be coordinated to maintain or enhance development opportunities.

When developed recreation facilities are proposed in threatened and endangered species (T&E) habitat, a biological assessment will be obtained and a no adverse effect determination made before project authorization. Existing facilities located in T&E habitat will be managed to protect that habitat.

A07 Prepare a Recreation Opportunity Guide (ROG) on each Ranger District within 5 years and update as changes occur. Maintain a Forestwide copy at the Supervisor's Office.

Maintain a standard service level of Information Services (IS) at the Supervisor's Office, all District Offices and satellite offices.

Improve interpretive measures for National Register archeological sites in consultation with appropriate Native American leaders. Maintain less than standard service levels at other IS locations. This level will center on basic user safety and resource protection only.

Maintain fee sites and large picnic areas at the standard service level and Condition Class 1. A list of these sites can be found in each Management Area description. All other sites will be managed at a level which maintains standards for public health and safety. These sites will be maintained in Condition Classes 2 & 3.

Hazard inspections will be made on developed sites each spring. Serious hazards which threaten public safety will be corrected immediately. Other hazards will be corrected prior to opening the site to the public.

Assure water provided meets Safe Drinking Water Standards, and all sewage and solid wastes meet Solid and Liquid Waste Disposal regulations.

A07 A08 Update and upgrade recreation data base (RIM) using sampling techniques at an average annual rate of 33% of the developed sites over the decade. Utilize periodic checks for the remaining sites.

Analyze, plan, and carry out resolution of conflicts between different types of recreation, such as motorized, as a part of the Travel Management planning process. Update as part of that continuing process.

Prepare comprehensive operation and maintenance (O&M) plans of work annually to insure most effective use of dollars and human resources in all areas of recreation, special uses, and interpretive services management.

A08 ORV closure and restrictions are indicated by management area. Remaining areas are open to ORV use unless resource considerations necessitate additional restrictions or closures based upon monitoring activities and appropriate environmental analysis. These actions may vary from a seasonal restriction for specific vehicles to yearlong closures for all vehicles. User enjoyment and safety will be considered as well as needs for resource protection. Criteria for restricted use or closure of an area may include:

1. Loss of vegetative cover
2. Degradation of important wildlife habitat or wildlife harassment.
3. Identifiable impacts on soils, riparian ecosystems, or water quality.
4. Disturbance of known Native American religious or cultural resource sites.
5. Need for separation of different recreation uses which may adversely affect one another.
6. Disruption of grazing management programs or harassment of permitted livestock.

Categories of ORV area management are defined as follows:

CLOSED - to all motorized travel. Use of motorized vehicles is not permitted on trails or for cross-country travel. Some administrative roads may occur In some areas, but they are not open for public use.

RESTRICTED - area closed to all cross-country motorized travel. Road and trail use is permitted through an area, but no cross-country use is allowed. Vehicles are allowed to pull off of open roads up to 100 yards (or to other administratively designated areas) for parking or camping.

RESTRICTED SEASONALLY - Same guidelines as RESTRICTED but only for specified areas or times of the year. Outside of these times, areas are open.

OPEN - to cross-country travel. Some slopes over 40% may be designated as open. Organized ORV events may occur by permit only. Seasonal closures may be
imposed for resource protection.

Initiate Limits of Acceptable Change (LAC) inventories at high use dispersed areas, and utilize periodic checks of all others to annually update the recreation data base (RIM) in dispersed areas.

FORESTWIDE

Areas of alpine tundra will receive frequent patrol to evaluate impacts and prevent long term damage. The fragility of this ecosystem will be considered during new trail location and other recreation planning.

All dispersed recreation will be managed at standard service level. Maintain existing dispersed recreation facilities (fencing, gates, signs, etc.) to Condition Class 2 or higher.

Clean and maintain all known intensive use areas throughout normal use season. Encourage, through signing and personal contacts, garbage removal via a pack-in/pack-out program.

Commercial recreation special use permits (resorts, outfitter/guides, etc.) may be issued to qualified applicants whose services are available to all members of the public when the proposed use:

1. fulfills a demonstrated public need without unduly infringing on the use by the general public,
2. is identified in and is in accordance with an approved implementation plan (where called for) and will not cause the recreation carrying capacity of the involved area to be exceeded,
3. does not serve & function that can logically be provided by private enterprise off National Forest lands and will provide a type of recreation activity naturally associated with a National Forest, and/or
4. is compatable with Management Area objectives.

Permits for non-commercial recreation special uses (summer homes, organization camps, special events, etc) may be issued to qualified applicants when the proposed use:

1. fulfills a demonstrated special public need without unduly infringing on the use by the general public,
2. is in accordance with an approved implementation plan (where called for) and will not cause adverse impacts on the Forest or its resources which cannot be fully mitigated,
3. does not serve a function that can be provided by private enterprise off National Forest lands, and/or
4. is compatable with Management Area objectives.

Develop criteria to evaluate all tenure analysis studies on Horseshoe Springs, Gallinas, Grass Mountain, Holy Ghost, and Winsor summer home areas. Establish a common expiration/termination date (2007) for these areas in order to reduce administrative costs and fee update analysis.

No new summer homes will be established.

FORESTWIDE

A10 A11 The Continental Divide National Scenic Trail (CDNST) route is Identified on the enclosed Transportation System Management Map. Where the trail currently does not exist or follow roads, a
Corridor is identified within which the trail will be located. The corridor is defined as the area which encompasses the
foreground seen area (up to one mile wide) as viewed from the identified route. The CDNST corridor has a visual sensitivity 1 classification. The resultant Visual Quality Objectives are given in each management area the corridor crosses. The following segments exist and will be marked by 1990 with the CDNST logo according to the standards described in the CDNST Comprehensive Plan:

Forest Roads 151;
Forest Roads 77, 170, & 468;
NM Highway 96;
Forest Roads 76 & 171;
Trails 31, 51, & 46;
Forest Road 95

Newly constructed segments will have the CDNST logos installed as part of the construction.

Trails will be designed and constructed/reconstructed to meet standards consistent with existing and desired types of use, in accordance with FSH 2309.18. Adequate drainage will be provided to prevent concentrated flows and sediment-laden run-off from entering stream courses.

A12 Trail system operation will include monitoring use and effects of use, imposing user restrictions where appropriate and necessary and informing users through guides, signs, and personal contact of the intended use of the trail.

All trails will be maintained at the standard service level. This will include condition surveys, work to correct deficient conditions, and a maintenance log as described in FSH 2309.18. Maintenance will be geared to meeting management area objectives and will be prioritized by the following needs:

1. Correct unsafe conditions.
2. Correct resource and trail damage.
3. Restore trail to planned design standards.

WILD and SCENIC RIVERS

J29 The Rio Chama, Pecos River, and the East Fork of the Jemez River are recommended as national Wild & Scenic Rivers, in the following classifications:

Rio Chama	Wild	21.5	miles
	Recreational	9.5	miles
Pecos River	Wild	13.5	miles
	Recreational	7.0	miles
East Fork of the Jemez	Wild	4.0	miles
	Scenic	5.0	miles

Manage these rivers in such a manner as to protect and enhance the values for which they were **classified as eligible**. For wild portions this will mean keeping the river section free of impoundments, accessible only by trail, shorelines in an essentially primitive condition (essentially free of structures, diversion works, and modifications of the waterway such as rip-rapping and channelization), and meeting or exceeding State standards for water quality. Scenic sections will remain free of impoundments, have largely primitive shorelines and shoreline development, and be accessible only at certain points by roads. Recreation sections may be paralleled by roads, **and** have some development and resource management along its **[-----]** shorelines, provided the waterway and its surroundings are generally natural and riverine in appearance.

In order to maintain these characteristics, manage the river corridors in accordance with the guidelines set forth in Chapter 8, Section 8.2 of the USDA Forest Service Land and Resource Management Planning Handbook (FSH 1909.12). These guidelines supercede those summarized in Appendix D of the Final Environmental Impact Statement for this Plan, which was based on interim guidelines.

These rivers occur in the management areas indicated below. Should **Congressional action fail to designate them**, they will be managed under the standards and guidelines of **the following management areas:**

River	Management Area
Rio Chama River	H,C
East Fork of Jemez River	L
Pecos River	H,D

Th
e suitability for designation of the Rio Guadalupe and Canones Creek may be reconsidered when this plan is revised, in the next planning cycle (10-15 yrs.). Also, these streams will be proposed as a planning alternative for inclusion into the Wild and Scenic River system when any specific impoundment or diversion that might adversely affect their values or eligibility is proposed.

VISUAL RESOURCES

A02 During the intensive reconnaissance phase of project planning, verify or refine the Visual Resource inventory. Variety classes and sensitivity levels normally will not change. However, on-site inspection or detailed computer simulation of seen areas may reveal subtleties not sensed in the existing, large scale simulated inventory. Use the revised inventory to guide project design to meet the prescribed Visual Quality Objective, and to update the overall Forest inventory.

Inventory the Visual Absorption Capability (VAC) and Existing Visual Condition (EVC) of the Forest within the first planning period. The EVC Inventory will include identification of those areas which require visual rehabilitation or enhancement.

A06 Manage for a Visual Quality Objective (VQO) of Retention on all existing and proposed (see Table 12) recreation sites, and the area viewed as foreground from the sites. Apply Vegetation Management Prescription II for these areas (see Table 22 below).

A13 Manage for Visual Quality Objectives (VQO's) as defined in each Management Area.

Apply design objectives and guidelines by VQO as defined in USDA Handbooks, National Forest Landscape Management Series.

For existing and potential developed sites, including the area viewed as foreground from the site, manage for the Visual Quality Objective of Retention.

Develop vegetation management plans for developed sites. These plans will identify key visual elements for management. Plans will outline the activities to sustain the desired landscape and key visual elements over time.

Develop Viewshed Corridor Plans for those Sensitivity Level 1 roads specified in each Management Area. These plans will define project level landscape characteristics and identify the key visual elements for management. Plans will outline the activities to sustain the desired scenic landscape character over time.

A13 E07 The following vegetation management prescriptions, only, will be used in visually sensitive areas (foreground and middle ground Retention areas), in proportions indicated in the individual management areas: unless there are conflicts with TES species habitat requirements. TES habitat needs will take precedence over visual resource management.

Table 22. Vegetation Management Prescriptions for Visually Sensitive Areas.

SPECIES OR VEGETATION	SLOPE	MANAGEMENT OBJECTIVES	HARVEST METHOD	INTERMEDIATE CUTS	OTHER
I. Ponderosa Pine/Mixed Conifer	<40%	Maintain inherent scenic values, enhance viewing opportunities & increase variety where appropriate. Achieve a VQO of retention on seen areas of the viewshed. Maintain and enhance old growth stands and characteristics.	2 step shelter-wood in 5-40 acre units. Seed cut at 150-240 years to GSL 30. Final removal approximately 50-60 years after seed cut. Thin understory to 70 GSL at that time. ROTATION AGE: 200 - 300 years	1-4 as needed, to approximately 70 GSL, at no less than 20 year interval. TSI: 1 precommercial thin to GSL 70 when overstory is removed.	Seed cuts not necessary when advanced re-generation exists. Preferred method of site preparation is broadcast burning.
		Maintain 25-40 trees per acre with an average diameter of at least 20", in clumps, for as long as possible. This should include at least 3 trees per acre in the 32" size.			
II. Ponderosa Pine/Mixed Conifer/Spruce-Fir	<40%	As in first paragraph above, but strive for stands with at least 3 age classes present, intermixed.	Uneven-aged management in 5-100 acre stands. Cutting methods are single tree selection and group selection. Stands entered at 40 year interval and cut to 80-100 GSL.	None	Target large diameter tree is 32", minimum of 5 trees 28"+ per acre. Distribution of tree sizes will follow an inverse J curve with a Q factor of 1.5.

Table 22. (continued) Vegetation Management Prescriptions for Visually Sensitive Areas.

III. Ponderosa Pine/ Mixed Conifer	All	As above, but at selected sites, create vistas, and feature focal points by patch cuts or heavy thinning.	Clearcut in units ranging up to 5 acres, with a linear opening along roads or trails of no more than 300'. ROTATION AGE: 110-150 years	As needed to achieve GSL 90 or convert to shelterwood system (I). TSI: 1 as needed	Shape larger units so that full size is not perceptible from road or trail.
IV. Aspen	All	Maintain scenic diversity by perpetuating, re-generating stands. Maintain an aesthetic mix of stands with a variety of ages. Do not convert to conifers.	Clearcut as stands become decadent or a natural succession begins to replace aspen with conifers. Limit clearcuts to 2 acres or less in immediate foreground, to 10 acres in the other foreground, unless otherwise indicated in the Viewshed Corridor Plan ROTATION AGE: 80-110 years	None	Shape larger units so that full size is not perceptible from road or trail. Remove invading conifers as opportunities arise before regeneration cut.
V. Ponderosa Pine/ Mixed Conifer	>40%	See #I.	See #I.	1-2 as needed	See #I

CULTURAL RESOURCES

A01 Coordinate cultural resource management with the State of New Mexico's historic preservation plan, the SHPO, the State Archeologist, and other State and Federal agencies to the extent possible. Coordinating activities may include:

1. Consultation and periodic meetings.

2. Sharing of cultural resource site data, plans, and other cultural resource documents.

3. Participation in State cultural resource planning processes.

Follow the allocation scheme as outlined in the Southwestern Region's Cultural Resource Management Report #3. "Problem Orientation and Allocation Strategies for Prehistoric Cultural Resources on the New Mexico National Forests". Identified sites will be assigned to established management categories based on knowledge accumulated through continuing cultural resource survey.

As provided for in the American Religious Freedom Act, in areas of Native American religious use, the Forest will determine, with the appropriate traditional religious leaders, actions to preserve the religious practices and to protect Native American religious sites and shrines from ground disturbing activities.

The following guidelines are provided to coordinate Native American cultural needs with other resource management activities occurring on each district. The District Ranger will:

1. notify Pueblo and tribal leaders of projects in the initial stages of planning, using NEPA procedures;

2. meet with appropriate Pueblo and tribal leaders at least twice a year to inform them of ongoing and proposed projects;

3. provide enough project information to allow the Pueblo and tribal leaders to evaluate impacts to Native American cultural and religious sites early In the project planning process;

4. coordinate with Pueblo and tribal leaders to identify ways to mitigate project impacts on Identified significant sites or during significant tine periods, and;

5. Periodically update permits and the process which accommodates Native American access to collect greens, herbs, or other materials for tribal ceremonies.

The Forest will comply with the National Historic Preservation Act of 1966, as amended, and 36 CFR 800 regulations. The Forest will also comply with the terms of the negotiated settlement to Save the Jemez et al./ State of New Mexico vs. Lyng et al. Litigation, due to expire on January 20. 1989. Some specific stipulations include:

FORESTWIDE

By April 1, 1988, prepare a Cultural Resources Planning Assessment document which summarizes the current status of cultural resources information and management on the Forest. It will identify priorities and establish schedules for future cultural resource inventory, evaluation, site protection, National Register site nomination and maintenance, interpretive opportunities, assessment of the interaction of cultural resource management and other resource management activities, and coordination of cultural resource management activities with various State and Federal agencies. Annually review the Cultural Resources Planning Assessment and update as necessary.

A02 Survey procedures for undertakings include:

1. Consultation with the State Historic Preservation Officer (SHPO) regarding cultural resource survey requirements.

2. Survey to appropriate intensity on all areas receiving ground disturbing activities to identify cultural resources.

3. Survey 100 per cent of all project areas located within the area of required 200 per cent survey specified in the lawsuit settlement.

4. Consultation with the SHPO and, as appropriate, the Advisory Council on Historic Preservation (ACHP) regarding effect on cultural resources prior to project authorization.

Identify areas not scheduled for surface disturbing projects and establish a schedule, based on planned funding, for survey. Priorities will be based on the following:

a. Areas lacking site density information.

b. Areas of known high site density or areas with a high potential for vandalism.

Schedule an update of the existing cultural resources overview. The updated overview will summarize current knowledge of major cultural periods and manifestations on the Forest and identify data gaps and research needs.

A03 Assess the potential effects of proposed actions upon cultural resources. All sites will be initially evaluated to the extent necessary to determine If they are potentially eligible for the National Register of Historic Places (NRHP).

FORESTWIDE

Manage sites listed in, eligible for, nominated to, or potentially eligible for the NRHP to achieve a “no effect” finding in consultation with the SHPO and, as appropriate, the Advisory Council on Historic Preservation (ACHP). Where resource conflicts preclude achievement of a no effect situation, manage sites to achieve a “no adverse effect” finding through consultation with the SHPO and ACHP.

In consultation with the SHPO, evaluate identified sites for eligibility for the NRHP. For sites considered eligible, assign a priority for nomination and nominate at least two sites per year for every full-time professional employed by the Forest. Alternatively, the Forest may submit at least one multiple property nomination per year or may cooperate with the other National Forests to produce such a nomination.

As cultural resource inventory data continues to accumulate, evaluate additional areas for possible inclusion to Management Area “I”.

Selection criteria for additional areas include, but are not limited to: 1) a high density concentration of numerous sites; 2) sites which are exceptional because of unique size or quality, and; 3) sites or areas characteristic of a particular time period or cultural adaptation not sufficiently represented in the current management areas.

A04 Protect all sites listed in, nominated to, eligible for, or potentially eligible for the NRHP. For evidence of vandalism, artifact collecting, or illicit excavation, implement appropriate protective measures, such as signing, fencing, administrative closure, remote sensing, increased patrolling, or public education. For evidence of natural deterioration, implement appropriate stabilization measures.

WILDLIFE C01 Continue to emphasize threatened, endangered, and sensitive AND FISH species for studies.

Continue to emphasize coordination with State and other Federal agencies.

In cooperation with the New Mexico Department of Game and Fish and the U.S. Fish and Wildlife Service, jointly review the threatened, endangered, and sensitive species program to identify species priority, direction, and joint opportunities.

In cooperation with the New Mexico Department of Game and Fish, jointly review the status and action needs for the spotted bat and meadow jumping mouse.

Cooperate with the New Mexico Department of Game and Fish, the U.S. Fish and Wildlife Service, and other agencies to develop a Master Interagency Agreement for the Jemez Mountain Salamander.

Continue to support the peregrine falcon Master Interagency Agreement with the New Mexico Department of Game and Fish and the U.S. Fish and Wildlife Service.

Develop site plans for the peregrine falcon.

Combine watersheds, other physical land areas and dominant land uses to form ecosystem management areas, generally ranging from 10,000 – 50,000 acres. These ecosystem management areas will be used to inventory the existing and desired conditions, and identify management opportunities and possible projects to add to the Schedule of Proposed Projects.

Ecosystem management areas will be used to plan and evaluate age class distribution, old growth requirements, seral diversity, cover/forage distribution, etc.

Manage at least 5 logs per acre in various stages of decomposition where consistent with visual quality and fuel loading objectives. Wildlife logs should be the largest diameter available and at least 15 feet in length.

Continue to identify existing and potential habitat for peregrine falcons. Complete inventories and habitat management plans for breeding habitats. Monitor management practices within designated peregrine falcon habitat and evaluate impacts.

INSERT MEXICAN SPOTTED OWL STANDARDS AND GUIDELINES. SEE APPENDIX D.

Inventory, evaluate, and improve areas of streams, lakes, and wet lands for cold water fisheries, especially the Rio Grande Cutthroat trout, water fowl and other water-related habitats.

Increase carrying capacity for put-and-take, wild trout and native trout fisheries through stream improvement projects.

Adjust riparian plan composition or structure through coordination with other uses or direct manipulation in order to achieve riparian standards. (see F03, F04)

In the construction or reconstruction of campgrounds adjacent to fishing streams and lakes, keep the habitation improvements away from the stream banks and lake shores.

FORESTWIDE

Consider culturing, stocking, protective fencing and other appropriate methods to enhance plant species such as Grama grass cactus (Pediocactus papyracanthus) and the wood lilly (Lillium philadelphilcum) with the goal of eliminating the need for formal listing as threatened or endangered by the U.S. Fish and Wildlife Service.

Inventory and evaluate the Southwestern Region sensitive plant listed species.

Consult and cooperate with New Mexico Natural Resource Department (Resource Survey Section) to achieve management objectives for threatened, endangered, and sensitive flora.

INSERT NORTHERN GOSHAWK STANDARDS AND GUIDELINES. SEE APPENDIX D.

Avoid adverse impact upon elk calving grounds. Coordinate wildlife migration routes, watering needs, hazards, and escape routes.

Activities likely to cause disturbance, including public use will be prohibited in the vicinity of essential peregrine falcon nesting habitat between March 1st and August 15th, unless a biological assessment and determination of "no effect" has been made. Should peregrines remain attached to nest sites after August 15th, this period may be extended; or should young peregrines disperse earlier than August 15th this period may be shortened. Seasonal restrictions will apply to all nesting habitat unless the biological assessment determines that the proposed activity will have no effect after May 21st. Such activities may include but are not limited to: recreational activities or vehicular traffic within 1 mile, or other motorized equipment within two miles. In addition, land-use practices or development which significantly alters the character of essential peregrine falcon hunting habitat or prey base (generally within four miles of nest site) will be prohibited. All activities proposed within four miles of potential or existing nesting habitat will be evaluated for potential effects.

Manage firewood to eliminate gathering activities within 1 mile of essential peregrine falcon nesting habitat during occupied periods.

Permitted firewood collection will not be allowed in occupied Jemez Mountains salamander habitat unless biological evaluation determines the action to be beneficial.

Monitor management practices within occupied and potential threatened or endangered species habitat and evaluate impacts.

Proposed activities which may disturb the integrity of prairie dog towns must be fully evaluated and managed to perpetuate the species. Consideration will be given for their potential contribution to Black-footed Ferret recovery efforts.

Manage for indigenous fauna in cooperation with the New Mexico Department of Game and Fish. Generally, exotic species will not be introduced. Exotics determined to be undesirable on National Forest System lands will be managed to obtain the goal of elimination in cooperation with appropriate State or Federal agencies.

Cooperate with New Mexico Department of Game and Fish in monitoring indicator species populations. Establish baseline data for indicator species habitat and monitor trend at ten year intervals. Additional plant and animal species may be selected for monitoring during project planning.

Accomplish recovery projects included in approved recovery plans. Projects will be coordinated through integrated forest management practices.

Incorporate the State Comprehensive Plan in the development of Ranger District wildlife plans for non-game and game species.

Manage threatened and endangered animal, fish and plant habitats to achieve delisting in a manner consistent with the goals established with the U.S. Fish and Wildlife Service and the New Mexico Department of Game and Fish in compliance with approved recovery plans.

Habitat requirement for TES species will take precedence over requirements for other species and habitat requirements for sensitive species will take precedence over nonsensitive species. Habitat requirements for endangered species take precedence over threatened species.

C01 C02 Develop management plans for wintering bald eagle habitats as C03 specified in approved recovery plans. Maintain bald eagle winter roost and perch trees. Accomplish riparian and fisheries improvements to maintain and enhance prey base for wintering bald eagles.

Continue activities to improve Rio Grande Cutthroat habitat with the objective of securing the species. Develop Rio Grande Cutthroat trout fisheries within selected areas identified in conjunction with the New Mexico Department of Game and Fish.

Studies will be conducted to ascertain suitability for reintroduction of endangered, threatened, proposed, and state listed native species into suitable habitats. This will be accomplished in conjunction with development and approval of recovery plans.

Monitor management practices within occupied and potential habitat for plants listed as threatened, endangered, or on the Southwester Region sensitive list. Manage sensitive species to sustain viability and prevent the need for listing as threatened or endangered. Recovery activities will be pursued where pertinent. If a species is proposed for listing, monitor actions to determine affect of management practices on habitat and the need for conference with U.S. Fish and Wildlife Service.

Review all planned or permitted programs and activities to develop biological evaluations and determine needs for consultation or conference with the Fish and Wildlife Service and the New Mexico Department of Game and Fish. Consultation will be initiated for situations where listed or proposed listed species may be affected. This process will be completed prior to project approval.

Plan and administer activities in known turkey and raptor nesting areas so as not to disrupt nesting success in a manner which significantly effects the population.

Maintain, as a minimum, 15% mature and over mature mast producing stands in Pinyon-Juniper and oak zones. Maintain escape cover and mast production regimes at no greater than ½ mile intervals, where possible. These characteristics will be distributed and monitored in ecosystem management areas.

Retain activity created slash piles to benefit wildlife in a manner which is compatible with other resource objectives. Where deficient, develop turkey nesting cover. These nesting piles should be approximately 3 feet high and 10 feet in diameter, and within ¼ mile of water sources.

Cooperate with state and other agencies to maintain wildlife populations within the habitat capabilities.

Consistent with visual quality and other objectives, enhance the habitat value of wildlife forage areas such as meadows, clearcuts, or other openings by providing an adequate vegetation screen between the road and the opening.

	C04	Include game and non-game habitat improvement projects in sale area improvement plans for timber sale areas, to benefit wildlife and fish. Adequate perch and roost trees for raptors will be managed within a 200 feet wide stand along cliffs, major ridges, and openings. Trees should be open crowned, both living and dead, and maintained over time. Consider reintroduction of native bighorn sheep as identified in forest feasibility studies and the State Comprehensive Plan, and consistent with the management area emphasis.
	C06	Provide non-game entrance and escape ramps on water developments intended for livestock or wildlife use. Remove fences and loose wire as they are abandoned.
RANGE MANAGEMENT	D01 D02	Manage to bring all grazing allotments to satisfactory management. Satisfactory management occurs when actions are proceeding according to the Allotment Management Plan to achieve management area objectives. INSERT GRAZING MANAGEMENT STANDARDS AND GUIDELINES AND ALLOWABLE USE TABLE. SEE APPENDIX D. Update range analysis and development of management plans on all allotments. Allotments which do not have implemented management plans consistent with management area will be emphasized. The priority of action from most important to least important will be as follows: 1. Initiate Category IV analysis on allotments where management is not moving toward correction of the over obligation. 2. Initiate Category II or III analysis on allotments where management can correct the unsatisfactory conditions. 3. Initiate Category I or V analysis on allotments under satisfactory management. Consider opportunities to balance the Forest obligation on these allotments, particularly where Forest Service investment has created excess forage. Range analysis and Production Utilization studies will be used to document needed adjustments. Negotiated agreements with the permittees is the initial step in achieving needed permit adjustments. If satisfactory management plans cannot be attained, other measures such as movement to under stocked allotments, reductions in permitted numbers, or other adjustments will be utilized.

FORESTWIDE

D03 Evaluate the need to control insect or disease outbreaks by mechanical, biological, or chemical methods. The method utilized will be determined through NEPA process, cost analysis and coordination with the Animal and Plant Health Inspection Service (APHIS).

D04 All sage and pinyon-juniper forage improvement projects will be limited to previously treated areas. Retreatment of these existing projects will be guided by the following criteria:

1. Site has soil revegetation potential of moderate or high.
2. Slopes generally less than 15 percent.
3. Soils have low or moderate erosion hazard.
4. Treatment results are cost effective.
5. Area retreatment will be consistent with visual, wildlife, and other objectives.

Methods of treatments will be determined for each individual project by economic and environmental analysis, the guidelines listed in F03, and the permittee's ability to participate.

D04 D05 Structural and forage improvement activities will be compatible with other resource objectives.

Permittee investment will be encouraged by giving priority to projects that contain contributions by the grazing permittee, with the eventual goal of permittee responsibility for replacement investment of 50% of all range improvements.

D05 Wildlife values and recreation values will be integrated in all structural improvement projects.

Allotment fence management will meet wildlife standards to allow easy migration and passage.

New and reconstructed livestock water developments will include wildlife access, cover and escape considerations.

Construct new and replace existing structural improvements needed to implement and maintain the range resource management level identified for each management area. Comply with construction Standards in FSM 2240, 2320, and FSH 2209.22.

	D06 D07	Assign permittee maintenance of existing structural improvements on a continuing basis to insure full life of the improvement. Jointly develop annual permittee plans of work, including a salting plan that minimizes impacts to riparian zones, meadow ecosystems, and other Forest resources. Maintenance of range improvement projects will be evaluated and executed to have no adverse effect on T & E species.
TIMBER MANAGEMENT	E00	Review classification of forest and woodland inventories as part of project planning. Maintain a stand database for forest and woodlands utilizing compartment exams, project activity records, and woodland inventories as the basis for providing a continuous forest inventory. Integrated resource management will be used for planning all timber related activities. These activities include timber sales, firewood removal, thinning, salvage sales, reforestation, and sanitation projects and will be designed using integrated stand management techniques.
	E03	Complete compartment stand examinations to regional standards to provide data for detailed stand prescriptions and to monitor plan results. Stand sizes should range from 10 acres to 100 acres with the preferred size being 20-80 acres. Exceptions would be in areas of little anticipated activity, to meet other resource needs, or where inventoried as large, truly homogeneous stands. Exceptions will be reviewed by the appropriate line officer before the environmental analysis is complete.
OLD GROWTH		Old growth is not well understood in the Southwest. Consequently, as knowledge is gained the characteristics and inherent values of old growth stands will be better defined. Site specific identification of old growth will occur during ecosystem area analysis or project planning. Stands managed for old growth should be at least 40 acres in size, with a preference for larger stands. Until the forest plan is revised, allocate no less than 20 percent of each forested ecosystem management area to old growth as depicted in the table defining the minimum criteria for old growth. In the long term, manage old growth in patterns that provide for a flow of functions and interactions at multiple scales across the landscape through time.

Allocations will consist of landscape percentages meeting old growth conditions and not specific acres.

All analyses should be at multiple scales – one scale above and one scale below the ecosystem management areas. The amount of old growth can be provided and maintained will be evaluated at the ecosystem management area level and be based on forest type, site capability, and disturbance regimes.

Strive to create or sustain as much old growth compositional, structural, and functional flow as possible over time at multiple-area scales. Seek to develop or retain old growth function on at least 20 percent of the forested area by forest type in any landscape.

Use information about pre-European settlement conditions at the appropriate scales when considering the importance of various factors.

Consider the effects of spatial arrangement on old growth function, from groups to landscapes, including de facto allocations to old growth such as goshawk nest sites, Mexican spotted owl protected activity centers, sites protected for species behavior associated with old growth, wilderness, research natural areas, and other forest structures managed for old growth function.

In allocating old growth and making decisions about old growth management, use appropriate information about the relative risks to sustaining old growth function at the appropriate scales, due to natural and human-caused events.

Use quantitative models at the appropriate scales when considering the importance of various factors. These models may include, but are not limited to: Forest Vegetation Simulator, BEHAVE, and FARSITE.

Forested sites should meet or exceed the structural attributes to be considered old growth in the five primary forest cover types in the southwest as depicted in the table on the following page.

Thinning is permitted in stands being managed for old growth when the result will enhance attainment of the old growth characteristics. No treatments should occur in a stand managed for old growth once the stand has achieved minimum structural characteristics of old growth.

Narrative descriptions of old growth stand conditions by forest type are found in the glossary. The table on the following page shows the minimum structural characteristics used to define old growth.

The Minimum Criteria for the Structural Attributes Used to Determine Old-Growth

Forest Cover Type, Name	Pinon-Juniper		Interior Ponderosa Pine		Aspen	Mixed-Species Group		Engelmann Spruce Subalpine Fir	
Forest Cover Type, SAF Code	239		237		217	210, 211, 216, 219		206,209	
Site Capability Potential Break Between Low and High Site			55 minor			50 Douglas-fir Edminster & Jump		50 Engelmann Spruce Alexander	
Site	Low	High	Low	High	All	Low	High	Low	High
1. Live Trees in Main Canopy:									
Trees/Acre	12	30	20	20	20	12	16	20	30
DBH/DRC	9"	12"	14"	18"	14"	18"	20"	10"	14"
Age(Years)	150	200	180	180	100	150	150	140*/170**	140*/170**
2. Variation in Tree Diameters									
(Yes or No)	ND	ND	ND	ND	No	ND	ND	ND	ND
3. Dead Trees									
Standing									
Trees / Acre	0.5*	1	1	1	ND	2.5	2.5	3	4
Size, DBH/DCR	9"	10"	14"	14"	10"	14"	16"	12"	16"
Height Feet)	8'	10'	15'	25'	ND	20'	25'	20'	30'
Down									
Pieces/Acre	2	2**	2	2	ND	4	4	5	5
Size (Diameter)	9"	10"	12"	12"	ND	12"	12"	12"	12"
Length (Feet)	8'	10'	15'	15'	ND	16'	16'	16'	16'
4. Tree Decadence									
Trees/Acre	ND	ND	ND	ND	ND	ND	ND	ND	ND
5. Number of Tree Canopies	SS/MS	SS/MS	SS/MS	SS/MS	SS	SS/MS	SS/MS	SS/MS	SS/MS
6. Total BA, Square Feet/Acre	6	24	70	90	ND	80	100	120	140
7. Total Canopy Cover, Percent	20	35	40	50	50	50	60	60	70

*Pinon-Pine: *Dead limbs help make up dead material deficit.*
***Unless removed for firewood or fire burning activities.*

*Spruce-Fir: *In mixed corkbark fir and Engelmann spruce stands where Engelmann spruce is less than 50 percent composition in the stand.*
***In mixed corkbark fir and Engelmann spruce stands where Engelmann spruce is 50 or more percent composition in the stand.*

ND is not determined; SS is single-storied; and MS is multi-storied.

FORESTWIDE

E04 Insure regeneration by natural or artificial means to meet Regional standards or as prescribed by silviculturist for the area to be regenerated. Reforestation will be accomplished through natural regeneration whenever possible. Reforestation will be accomplished as soon as practical following the action which resulted in the understocked condition. Harvested areas must be capable of being restocked within 5 years of final harvest.

Table 24. Minimum and Optimum Levels for Reforestation.

Cover Type	Cubic Feet Site Productivity	Minimum Trees Per Acres	Optimum Trees Per Acre		Percent of 1/100th Acre Plots That Are Stocked	
			w/o Pulp	w/ Pulp	Minimum	Optimum
Ponderosa Pine	<49	120	120	275	70	100
	49-84	130	175	275	70	100
	85+	145	175	325	70	100
Spruce/Fir	<49	120	200	350	75	100
	49-84	150	230	350	75	100
	85-110	275	350	400	75	100
	110+	315	400	450		
Douglas-fir, Blue Spruce, & White Fir	<49	120	160	300	75	100
	49-84	150	260	300	75	100
	85+	200	275	325	75	100
Limber Pine, Bristle Cone Pine, & Other Conifers	<49	120	120	275	70	100
	49-84	130	175	275	70	100
	85+	145	175	275	70	100

Timber producing areas deforested by catastrophic events will be reforested to Regional standards or as prescribed by silviculturist as soon as practical.

Stock used for artificial regeneration will be from locally collected seed sources and from genetically improved local seed sources as these sources are developed.

Any reforestation done on developed or planned administrative sites will be coordinated with the site development plan.

Reforestation projects will not be planned in areas which exhibit characteristics of a self perpetuating meadow ecosystem.

Reforestation of pinyon-juniper stands should be through natural regeneration.

Where needed, site preparation projects will be prescribed and designed to aid in obtaining natural regeneration.

Site preparation can be accomplished by mechanical, prescribed fire or other methods as best suits the site to be treated.

Reforestation sites will be monitored to ensure adequate stocking. The frequency and method are described in the Monitoring Plan.

E05 Use pre-commercial thinning to control stocking that will meet management objectives as identified in management areas and in stand specific prescriptions.

Other timber stand improvement measures, such as release, weeding, pruning and fertilizing may be used when prescribed in detailed stand prescriptions and are considered to be cost effective through economic evaluation.

Stand improvement in pinyon-juniper stands will be accomplished according to silvicultural prescription, primarily through economic evaluation.

Adjacent stands should be at least 2 age classes (40 years) apart to improve edge contrast.

E06 For stands managed under the even aged silvicultural system:

Clearcuts and other regeneration harvests which are high value forage producers should be planned adjacent to stands having high cover value.

Re-entry period will be 20 to 40 years for 0 to 40% slopes and 40 years for slopes over 40 percent. Minimum saw timber size will be 9 inches d.b.h. with other products available below 9 inch d.b.h. Stands are typically regenerated at 140 years of age except for aspen, pinyon, and juniper. Aspen will be managed at 80 years and Pinyon-Juniper at 300 year rotation. Other rotations will be utilized to accommodate needs for wildlife and visual objectives.

Unless other stocking is prescribed to meet management objectives in detailed stand prescriptions, use intermediate cuts in immature stands to maintain the following growing stock levels (GSL):

Ponderosa Pine: Site index of 66 or greater – 60 to 90 GSL.
Site index of 65 or lower – 50 to 90 GSL.

Mixed conifer: All site indexes – 60 to 90 GSL.

Uneven-aged management is the preferred system for managing timber resources.

For stands managed for uneven aged stand characteristics:

Re-entry period will be 40 years for all slopes.

The silvicultural system will be single tree or group selection, with group selections generally less than one-half acre in size, along with appropriate thinning and culturing.

Stands will have residual stocking in at least three canopy levels. These canopies will include a component of seedlings and saplings; a component of poles and small saw timber; and a component of mature and over mature saw timber.

Silvicultural treatments will leave sound snags (10"+ DBH). Manage for 220 natural snags per 100 acres on a minimum of 40% of the ecosystem area with emphasis on peripheral edges of openings. Areas unavailable for harvest are considered as part of the 40% as long as good spatial distribution is maintained. Additional criteria for snags are:

1. Unmerchantable trees selected for snag recruitment will be due to dead or broken tops, heart rot and lightning strikes and not primarily due to poor genetics.
2. Leave dwarf mistletoe free unmerchantable trees for snag recruitment and all existing snags 10" d.b.h. and above except those to be removed for public safety or fire management.
3. If unmerchantable trees are not available, then merchantable trees may be considered for snag or recruitment.

Leave at least one group of turkey roost trees per 160 acres in Ponderosa pine and mixed conifer type if stands providing suitable habitat are not available. Ideally, roosting habitat should have southerly to easterly exposures and be within one mile of water. Timber activities in turkey nesting areas will be coordinated to minimize impacts between April 20 and June 10.

FORESTWIDE

Stands within 200 ft. of canyon rims in Peregrine falcon feeding zones will receive uneven age, deferral, or other silvicultural treatment which enhances this key habitat and its features.

Log landing areas will be located outside of designated sensitive land areas to the extent practical. These sensitive areas include: riparian areas, wetlands and natural meadows, archeological sites, threatened and endangered or sensitive species habitat, and along Level I roads requiring viewshed corridor plans. When landings must be located in these areas they will be coordinated to the sensitive resource.

Adequate cover status should be maintained within 8 chains (530 feet) of actively used elk wallows, licks, and seeps. The area surrounding this feature will be managed as an uneven aged stand which provides cover over time.

Accessible unutilized cull material and slash over 3" in diameter should be made available for firewood for up to two years after timber harvests except as prescribed to meet other resource needs. Direct the public to areas to be cleaned up. Design road systems to accommodate the post harvest use by the public. Use road management to restrict use periods as needed for resource protection.

Limit ground lead logging equipment in most areas to slopes less than 40 percent. Skyline logging systems generally will be used for slopes over 40 percent or areas with sensitive resource needs. These skyline systems will only be used on selected demonstration areas in the next 10 years.

Openings created through harvest of timber or firewood will not exceed 40 acres in size, except with regional approval to meet resource objectives. Definitions of created openings by species are found in the "Regional Guide for the Southwestern Region" on pages 3-12 through 3-17. The guide also sets standards for minimum width between openings, maximum distance to hiding cover from openings, and defines when created openings are no longer considered to be openings. The Santa Fe National Forest will maintain the standards established in the Regional Guide.

Forest products such as Christmas trees, posts, poles, and vigas will be available if removal complements other resource objectives for the management area.

Salvage harvesting operations will be prescribed as needed to meet conditions imposed by wildfires, insect and disease infestations, blowdown, or other catastrophic events. Salvage harvesting will conform to integrated resource management principles and management area emphasis. Small sales will be the primary tool to accomplish salvage objectives.

Plan and administer timber harvest and firewood activities in known elk calving and deer fawning areas so as not to disrupt calving and fawning.

Provide green personal use pinyon-juniper firewood in designated areas. When designating firewood areas consider the potential impacts to pinyon nut crops and other resource concerns.

All firewood removal will be administered through a permit or sale system. Free use firewood for personal use will be restricted to dead and down material in designated areas to accomplish management objectives.

Designate stands of mature or overmature Pinyon for the gathering of pinyon nuts. Consult with Native Americans and other traditional users of this resource to determine the best areas. Prohibit firewood harvest in these designated areas.

Provide wildlings in a manner consistent with integrated stand management to accomplish resource management objectives.

Promote the use of green aspen for firewood, saw timber, vigas, latillas, and other products within integrated stand management concepts to accomplish regeneration of overmature stands.

Manage to perpetuate or maintain aspen stands along stream course reaches with less than a 6% gradient.

E06 E07 Planning and administration of timber harvest activities will protect trails, blaze trees, and trail markers.

E07 After reforestation needs are met, management area emphasis will guide the priority for use of sale area improvement dollars.

E08 Maintain cone collection programs to meet artificial reforestation needs by seed zones. Maintain a 10 year supply of seed.

E09 Continue selection of superior tree and seed areas as needed to produce sufficient seed source for a stable 10 year supply of seed.

FORESTWIDE

WATERSHED MANAGEMENT

F01 Conduct soil terrestrial ecosystem multi-level surveys as required by the National Cooperative Soil Survey.

Inventory existing acequias as part of project planning.

Conduct watershed condition, water resource, and riparian condition inventories, prioritize improvement needs, and develop comprehensive watershed improvement plans for major Forest watersheds during the first decade.

F02 Plan and design activities and management strategies specifically for soil and water resources improvement where watershed condition is unsatisfactory.

Plan watershed rehabilitation where necessary to protect water resources and soil productivity after wildfire.

Identify the base floodplain (100 year runoff event) on Forest lands when facilities or public safety may be affected by flooding.

Smoke management plans will be prepared to coordinate with other agencies and manage smoke dispersal according to meteorological conditions.

F03 Select treatment methods for plant control or revegetatlon projects according to the NEPA process and the following criteria:

1. Large equipment may be used:
   a. on slopes less than 40 percent,
   b. on soils with moderate or high revegetation potential, and
   c. when they will not adversely affect stream channels.
   d. on pinyon-juniper retreatment areas, where eighty percent of the stand is greater than 10 feet in height, with a minimum of 50 trees per acre;

2. Prescribed fire may be used:
   a. on areas with suitable fuel types,
   b. on areas where the proper vegetative response can be expected, and
   c. where the fire will not pose a threat to human safety or surrounding property,
   d. on slopes greater than 40 percent, with careful resource consideration.
   e. on soils with moderate or high revegetation potential.
   f. soils with low revegetation potential, as long as 40% of the vegetative cover remains.

g. on pinyon-juniper retreatment areas with adequate fine fuels to carry fire throughout the stand. 80 percent of the trees are 4 feet in height or less, with more than 60 trees per acre. Areas must have viable grass cover after treatment;

3. Biological controls may be used:
   a. on areas with suitable host types.
   b. on areas that would further management objectives through selective control of plant species.

4. Hand treatment should be used an areas where the other methods:
   a. would disturb fragile soils on steep slopes, or
   b. would cause other unacceptable impacts, or
   c. would pose threats to human health or safety, or
   d. would be too costly.

5. Chemical treatments may be applied:
   a. when determined through an environmental analysis to be environmentally, economically, and socially acceptable.
   b. on areas outside municipal watershed and human habitation.
   c. on soils with moderate or high revegetation potential,
   d. on areas that would benefit from selective control of plant species,
   e. on areas where the chemicals will not violate State water quality standards.
   f. on soils with moderate to high cation exchange capacity.
   g. on pinyon-juniper retreatment areas on stands where 80 percent of the trees are less than 6 feet in height, with more than 25 trees per acre.

Work toward improving unsatisfactory watershed condition to a satisfactory state on those acres that ran be cost effectively improved. This should be accomplished through a combination of structural methods and management strategies, such as road closures, satisfactory allotment plans, or ORV restrictions.

Accomplish 100 acres (approximately 66 miles) of road obliteration each year for the first two decades. Priorities for road obliteration will be based an the following criteria:

1. damage to the riparian ecosystem
2. unacceptable resource damage
3. management area emphasis of low optimum open road density or protection of sensitive soils.

Soil loss due to management activities will be within acceptable tolerance limits by the second year following the activity.

Minimize the impacts to soil and water resources in all ground disturbing activities.

BEST MANAGEMENT PRACTICES (BMP's)

Insure that the Best Management Practices (BMP) recommended by the State of New Mexico, the EPA and the Forest Service are utilized in all projects where water quality may be affected by non-point source pollution to insure compliance with New Mexico water quality standards. These practices are determined to be the most effective and practical means of preventing or reducing the amount of pollutants generated by non-point sources to levels compatible with water quality goals. Select Best Management Practices appropriate to the water resource values present, the designated stream uses, and the project being planned.

The following section summarizes some of the most applicable BMP's to forest management:

BMP's for ROAD DESIGN, CONSTRUCTION, and MANAGEMENT

1. Locate roads away from watercourses. Determine the minimum distance between roads and watercourses after considering the following factors: (a) hill slope to water source, (b) soil erodibility, (c) geologic stability, (d) channel stability, and (a) obstruction such as fallen logs, boulders, and brush clumps.

2. Use brush mulches or filter fences when necessary to mitigate impacts of roads near water courses.

3. Locate necessary stream crossings at points where the stream channel is stable. Approach stream crossings at right angles.

4. Provide for storm flows across the road prism when through-fills across watercourses have been constructed.

5. Design roads so grades are less than 10 percent. If grades must exceed 10 percent, reduce the distance between drainage dips so water concentrations cannot erode the road surface or fill slopes.

6. Drain springs and seeps across roads with inslope road surfaces, ditches, and culverts.

7. Minimize construction of midslope roads where side slopes exceed 60%. When this construction is deemed necessary, full bench the roads and dispose of excavated material at a suitable location.

1. Provide road surface drainage by frequent rolling of the road grade, construction of drainage dips, or construction of lateral ditches.

2. Evaluate the need for aggregate surfacing for roads located on soils with low bearing strength or high plasticity.

3. Minimize the period that disturbed areas are not vegetated by revegetating and/or mulching cuts and fill slopes.

4. Maintain all roads to ensure proper function of drainage structures.

5. Avoid location of temporary roads on unstable or sensitive soils, steep slopes, and watercourses. Revegetation should be accomplished as soon as temporary use is completed, using site adapted seed mixtures and planting during moist seasons.

BMP's for TIMBER SALE PREPARATION and ADMINISTRATION

1. Protected streamcourses will be designated on the sale area map. Streamcourses include the designated area on each side of the stream which is given special management consideration. This area will be marked on the ground and will vary in width depending an the physical charastics and management objectives.

    a) Protected streamcourse crossings will be approved and designated by the Forest Service.
    b) Endlining will be used within protected stream courses unless the stream courses can be protected by other means.
    c) Directional falling away from the stream will be emphasized.
    d) Should woody debris fall Into the stream channel, an assessment will be made to determine whether or not it should remain.

2. Restrict skidding in areas having wet or highly erodible soil conditions.

3. In the harvest units designated for skyline logging, yarding will be upslope or fully suspended if cross slope yarding is necessary. Skyline corridor widths will be limited to 15 feet. Require one end suspension during in-haul for all skyline operations.

4. All landings and skidtrails will be properly drained using waterbars at proper spacing, and will be ripped and revegetated appropriately.

5. Use appropriate erosion control techniques when disking for site preparation.

After riparian condition inventories are initiated, prioritize riparian improvement projects according to the following criteria:

1. Effect on T & E habitat
2. Degradation of fisheries habitat
3. Negative impact on the quality of municipal water supplies
4. Ability to manage activities which are primarily responsible for the degradation
5. Significant variance from Southwestern Regional riparian guidelines
6. Areas of high visual interest

Identified acequias will be protected during all potentially disturbing activities.

F03 P04 Manage riparian areas in accordance with legal requirements regarding floodplains, wetlands, wild and scenic rivers, and cultural and other resources. Protect the productivity and diversity of riparian-dependent resources and emphasize the protection of soil, water, vegetation, wildlife, and fish resources prior to implementing projects. Give preferential consideration to resources dependent on riparian areas over other resources when conflicts among uses arise.

Riparian areas should be managed toward meeting the following guidelines:

Ground cover

Provide average ground cover of plants and litter at 80 percent of natural levels.

Shade

Provide shading over perennial and intermittent water surfaces that is 80 percent of natural levels considering unit reaches of about two miles in length.

Bank cover

Provide shrub and tree cover along bank lengths that is 80 percent of natural levels. Give emphasis to the protection of streambank stability provided by woody plant roots, particularly on outside bends of streamchannel meanders.

Streambed Sedimentation

Composition of sand, silt, and clays within streambeds should not exceed 20 percent of natural levels.

Plant CompositIon

Provide at least 60 percent of the woody plant composition in three or more riparian species.

Plant Structure

Provide at least three age classes of riparian trees and shrubs, with at least 10 percent of the cover in the seedling sapling stages and 10 percent in the mature and overmature.

Crown Cover

Provide crown cover of both trees and shrubs that is 80 percent of natural levels considering unit reaches of about 2 miles in length.

F04 Coordinate with concerned individuals, state and local governments, pueblos and tribes, and other resource agencies for projects in sensitive watersheds.

Management activities will be planned so that air quality will meet applicable Federal, state, and local regulations.

Encourage the formation of acequia user associations to identify users and promote a cooperative exchange of ideas.

Obtain Section 404 permits from the Army Corps of Engineers for activities within stream channels not already covered in the nationwide permit.

F07 Update water uses inventory. Maintain and protect existing water rights and acquire additional water rights necessary to provide for all Forest water use needs.

Promote the conservation and efficient use of water at all Forest water developments.

Coordinate the development of natural water sources to improve the habitat of all wildlife, including non-game.

F08 Maintain watershed structures wbich provide benefits and are economically efficient.

F09 Water quality and soil monitoring will be done in key locations to aid in identifying and correcting resource problems.

MINERALS G01 Review, in cooperation with BLM, existing withdrawals to insure compliance with FLPMA. Consider release for exploration and development while adequately protecting surface resources.

Designate sources for mineral materials such as sand and gravel for private, city, county, state, Federal and other use, where not needed for administrative use. Sources will be located consistent with Management Area emphasis and an appropriate level of environmental analysis.

Update mineral resource potential inventory.

G04 Respond in a timely manner to oil and gas, geothermal, and other mineral lease applications. Response will normally be within 30 days of receipt of application, but extensive public Involvement or environmental analysis needs may require more time. Such needs will be fully coordinated with the Bureau of Land Management (BLM).

There are two broad surface use leasing categories:

STANDARD includes lease with standard restrictions or lease with information notices alerting leasees to potential restrictions.

LIMITED includes lease with surface occupancy limited or lease with so surface occupancy.

The proposed surface use leasing category is indicated for each Management Area. An environmental analysis will indicate surface use stipulations for each lease proposal. These stipulations may include areas recommended for no surface occupancy.

G05 Respond to requests for large quantities of mineral materials through the NEPA process, advertised sale (if appropriate), and permit administration where not needed for administrative use.

Control surface uses in mineral operations through plans of operation and permits which provide for:

- meeting Visual Quality Objectives;
- preservation of water quality;
- protecting watershed values;
- reclamation to original or characteristic contours, or adapted to serve further surface resource uses;
- revegetation or reforestation with appropriate species to attain soil stability.
- cultural resources;
- Threatened and Endangered species and other wildlife habitats.

G06 Administer and process oil, and gas cases, per FSM 2822.41, R-3 Supplement 6, dated August, 1983 or as amended. Control surface uses in mineral operations through plans of operations and permits which provide for protection of resource values. Process notices of intent and operating plans as needed.

Ensure reclamation of mineral areas to restore resource damage and remove public safety hazards, as needed. Reclamation will be managed for progressive development and rehabilitation. Operating plans. Including appropriate bonding. will be the means for accomplishing this. Backlog work will be programmed and accomplished as opportun4ties arise and funding Is made available.

Mineral and geologic resources of abandoned mine sites will be considered and evaluated In developing alternatives for mine reclamation. Opportunities to use sites for mineral collection areas will be considered. The potential for future exploration and development also will be evaluated In determining the alternatives for reclamation. Reclamation will be designed to minimize destruction of -working* In* order to facilitate future exploratl,on/development and to aviod wasting reclamation dollars. AdIts.' shafts. and other mine working* are Invaluablia sources of geology and mineral resource information. Prior to the destruction of access to such workings. check with In-Service and out-Service geologists to see If this resource Information has been recorded. and If not recorded. provide an opportunity to record It.

G07 Undertake mineral examination and contest actions an claims where activity Is Inconsistent with the mining laws.

HUMAN RESOURCES H02 H04 H06 Continue to maintain the Forest Human Resource Program an opportunities and budget allow.

Maintain and expand opportunities for enrollees In Volunteer, Senior Community Service. and other Eum" Resource Programs.

Utilize volunteers and cooperative partnerships with other government agencies. non-proflt organizations. and the private sector to satisfy Forest objectives and the cooperators' needs. Resource areas In which to consider such arrangements may Include recreation site management, trail maintenance and construction. wilderness Information distribution. cultural resource site protection and Interpretation. wildlife habitat Improvement. riparian protection and rehabilitation. timber stand Improvement, reforestation, erosion control. stream cbannel Improvement. and facility maintenance.

Recognize that people In rural comm=ltles rely on the land for a social. economic. and religious base and that their way of life Is directly affected by the management activities of the National Forests.

Be sensitive to the traditional cultural values of Individuals and local communities In the planning and 4dainistration of Forest projects and activities. by seeking early and continuing Input from the public. organizations. or other government agencies.

FORESTWIDE

A Public Involvement Action Plan will be developed annually as a method of encouraging continued public involvement in the implementation of the Forest Plan. This annual plan will Identify:

1. annual meetings to present findings of monitoring, discuss areas of mutual concern, review the following year's program, and allow for public response to information presented;
2. working, or programmatic groups, designed to create lines of communication and/or solve problems in areas of concern to all interested parties. Areas of concern could include: range management, steep slope logging demonstrations, and integrated pest management;
3. specific project planning (Interdisciplinary team) opportunities. This would include participation of individuals, groups, and agencies to ensure public involvement at the project planning level.

LANDS AND SPECIAL USES

ELECTRONIC SITES

J 01 Electronic sites will be managed to the following standards:

1. Maximize joint use of existing facilities.

2. Lot plans as presently established will be phased out as opportunities arise through new user applications, improvement proposals, etc. Sites will be allocated on a total required facility basis. Efforts will be made to consolidate new electronic site proposals on currently approved Sites.

3. Maintenance of individual site roads and trails will be carried out jointly through cooperative maintenance, payments proportionate to the amount of use, or maintenance by the users.

4. Clearing of vegetation will be limited to that which poses a hazard to facilities and operational efficiency.

5. Commercial broadcasting and constant carriers will be allowed where operationally compatible. These sites must be physically separated by at least one mile from sites designated for two-way users. Any potential electromagnetic interference with existing facilities must be resolved before construction can proceed. Microwave corridors will be protected. VHF transmitters will be permitted if frequencies are compatible with those of previously established users.

6. All utility lines serving the site will be placed underground for new sites where VQO would be degraded by conventional above ground construction. Above ground utilities within existing sites will be placed below ground at the earliest opportunity.

7. All proposed site development, access roads, and improvements require detailed plans of buildings, antenna structures, and other support facilities and will be planned under the total required facilities concept. These plans will show the relationship of the proposed building and antenna to other facilities in the area, along with manufacturer's specifications for equipment to be used.

8. Encourage the formation of user associations at existing sites to facilitate site and access road maintenance, fee collection, and coordinated site improvement. Require user associations at all new sites.

9. Coordinate additions to existing electronic sites with existing users and other potentially affected parties (such as the National Radio Astronomy Observatory and the Very Long Baseline Array program).

The location of all potential and existing electronic sites is identified on the map accompanying this Plan. Areas on which electronic sites may occur are divided into three categories:

a. Areas with existing administrative use, which, due to importance of retaining frequency integrity, will be restricted to uses by the Forest Service or other Federal, State, or local governments.

These existing sites are:

Encino Lookout	Deadman Lookout
Red Top Lookout	Glorieta Baldy Lookout
Grass Mountain	Dome Lookout
Clara Peak Lookout	Cerro Pelon
Powder House	Jemez Rim
Fenton Hill	Elk Mountain
Black Mountain	Cerro Pelado Lookout

b. Sites which are suitable for low power compatible administrative, government, and/or commercial electronic use.
These existing sites are:

Barillas Lookout	Cuba Mesa
Eureka Mesa	San Joaquin
Tesuque Peak	Rowe Mesa
Mesa Alta	Lobato Mesa
Wolf Draw	Mesa Gurule

c. Peralta Ridge is the only site which, because of size proximity and sight lines to population centers, opportunity for good frequency separation, reasonable availability of development access and electric power is suitable for high power commercial installations.

d. Pajarito Peak, established for exclusive use by the Department of Energy (Los Alamos National Laboratory). This is the only site on federal lands which provides coverage to key areas of the National Laboratory. The Department of Energy has identified this site as critical to the laboratories security needs.

Potential site recommended for classification as a low power commercial site: Cerro Pelado

All other recommendations on new electronic site classifications will be made to the Regional Forester by the Forest Supervisor. These recommendations will be made after a comprehensive environmental analysis indicates such occupancy will not compromise other National Forest management objectives, that a valid demand exists for the requested use, and that the demand cannot be met outside of National Forest system lands.

UTILITY CORRIDOR

Provide for joint use in corridors and combine uses to extent possible in light of technical and environmental constraints.

All requests for utility corridors will require a comprehensive NEPA environmental analysis. Each management area has been evaluated as to suitability for corridor location. The suitability classifications are:

Exclusion area – No utility corridors allowed.

Avoidance area – Utility corridors are not consistent with management area emphasis and may require extensive mitigating measures.

Unclassified area – Utility corridors permitted after normal environmental analysis.

Specifications for raptor protection on permitted power lines during construction and reconstruction will follow "Suggested Practices for Raptor Protection on Powerlines", Report #4, by the Raptor Research Foundation.

Archeological survey, biological evaluation and engineering needs for special use permits will normally be the responsibility of the applicant. Permits will not be issued until archeological clearance and compliance with the Endangered Species Act is obtained.

Existing communication, power, oil, and gas transmission corridors on established rights-of-way are shown on the Utility and Corridor Map which accompanies this plan.

SPECIAL USE PERMITS

J01 J02 J03 Respond to applications for new permits, amendments, documents, leases, and rights-of-way within 30 days of receipt. Administer all existing permits.

Allow only one private road permit for private land or subdivision access unless public safety or natural features dictate otherwise.

Authorizations for special uses may be issued to qualified applicants when the proposed use:

1. fulfills a demonstrated special need without unduly infringing on use by the general public;

2. is in accordance with an approved implementation plan (where called for) and will not cause adverse impacts on the National Forest and its resources;

3. serves a function that cannot be provided by private enterprise off National Forest lands, and/or

4. is compatible with Management Area objectives.

LANDOWNERSHIP MANAGEMENT

J04 Review mineral withdrawal needs by the end of Fiscal Year 1988.

J05 Maintain land status records by updating as needed.

J06 Update and maintain landline location data base as additional corners are found and boundary is posted.

Surface disturbing resource projects will require search for and protection of land monuments.

J06 J07 Survey, post and maintain National Forest landlines in conformance with national standards.

J10 Continue to take action on occupancy trespass.

J11 J12 Rewrite landownership plans on all Ranger Districts in the first decade. These plans will identify base-in-exchange and desirable lands for acquisition.

To support management objectives and benefit of the administration of the forest, certain private lands within the boundary of the forest have been classified as desirable for acquisition. Because conditions may change over time, classify lands that are desirable for acquisition according to the following criteria:

1. Within designated wilderness.
2. Contain essential or critical habitat for threatened, endangered, sensitive, or other key wildlife species.
3. Needed for developed and dispersed recreation.
4. Wetlands or riparian areas.
5. Contain unique, natural, or cultural values.
6. Will improve public land management, meet specific administrative needs, or benefit other National Forest programs.
7. Provide needed access, protection from fire, or prevention of damage to public land resources.
8. Need rehabilitation or stabilization to restore their productivity.
9. Needed to block up public land ownership or meet research needs.
10. Needed to meet programs prescribed or endorsed by Congress or the Department of Agriculture.
11. Contain needed rights-of-way and will contribute to the Forest resource management base.

The acquisition program will be acheived through purchase, exchange, and donation.

The purchase program centers around the Land and Water Conservation Fund Act (LWCF) that designates that lands within the following categories are eligible for acquisition with LWCF funds:

1. Congressionally designated areas.
2. Wilderness.
3. Threatened and endangered species habitat.
4. Recreation Acquisition Composites (RAC).

The basic goals of the composite program are to acquire lands needed for construction of public recreation facilities, for dispersed recreation and open space, for protection of public recreation resources. The approved and proposed LWCF composites are listed below.

Table 25. Approved Recreation Acquisition Composites

Composites	Date Approved	Desirable Acres	Remaining Acres	1980 Cost (not appraised)
Pecos Canyon	8/28/78	1,570	1,570	$7,940,000
Cow - Bull Creek	5/18/78	6,609	6,472	$7,230,000
Fenton Lake	5/28/81	1,231	1,218	$7,000,000
Rio de las Vacas	6/28/78	3,723	3,723	$7,446,000
Jemez Canyon	6/28/78	3,972	2,232	$598,942
Chama River	8/18/77	765	683	$1,355,000
Las Vegas	10/19/77	6,400	3,528	$11,138,000
Rio Puerco	5/28/81	4,170	4,170	$10,265,000

Another area which qualifies as RAC lands is the 1764 acres identified in the Gallinas Canyon Management Plan approved on 9/5/66.

These RAC's have been field reviewed by the U.S. Department of Interior.

All lands identified for acquisition with the LWCF funds are also eligible for acquisition by exchange or donation and will be acquired by these authorities when the opportunity arises and where appropriate.

J13 J14 The land exchange program operates under several authorities and is the major land adjustment program that can be employed to acquire the lands that meet the acquisition criteria. The lands offered by the United States in a land exchange are tentatively classified as

base-in-exchange. Currently, the Santa Fe National Forest contains 6,000 acres that have been classified as base in exchange. Because local and physical conditions may change during the life of this plan, lands classified as base in exchange will generally meet one or more of the following criteria:

1. Lands needed to meet the needs of expanding communities.
2. Isolated tracts or scattered parcels that cannot be efficiently managed.
3. Provide consolidation of public lands.
4. To improve management, benefit specific resources, or increase management efficiency.
5. To meet overriding public needs.

Land exchange proposals as presented will be acknowledged within 30 days of receipt and will be evaluated to see if they meet the criteria for inclusion in public ownership.

Prohibit encumbrances or activities on base-in-exchange lands that may reduce the fair market value or reduce the disposal opportunities. No major investments such as TSI or range betterment projects will be planned on base-in-exchange lands.

The Small Tracts Act (PL 97-465) will be utilized in resolving longstanding encroachment problems right-of-way situations and mineral survey fractions to improve overall management of National Forest lands. Applications will be acknowledged within 30 days of receipt. Those which meet the criteria under the Small Tracts Act will be processed on a priority basis.

J18 Rights-of-way will be obtained to support resource management needs. The preferred method of obtaining rights-of-way will be through negotiations and willing seller consent. Condemnation will be used after failure to reach negotiated agreements.

Emphasis will continue for the acquisition of road rights-of-way for the following:

1. Administration of the National Forest
2. Public access to National Forest land
3. Recreation management program

4. Timber management program

J20 Review the Forest recreation and visitor map annually and update on at least an 8 year interval to maintain accuracy.

J22 Develop and maintain a Forest Plan and Forest data base in compliance with NFMA and NEPA. This includes a review by the Forest Supervisor of the lands covered by the plan at least every 5 years. Based on the findings from monitoring or other interdisciplinary evaluation processes, amendments to the plan may be made following appropriate public notification and satisfactory completion of NEPA procedures (36 CFR 219.10).

FACILITIES ROADS

L01 Emphasize reconstruction and rehabilitation of existing roads over new road construction.

Roads needed only for private land access, special uses, or mineral activities will be built and maintained by the permittee to minimum standards for the intended use. They will be closed, drained and revegetated after final use.

L01 L02 L06 Roads and facilities will be planned, designed and constructed at the minimum standards which serve the needs of resource management activities. In compliance with NEPA requirements.

Best Management Practices (BMP's) will be used in the design, construction, and maintenance of roads to minimize erosion and sedimentation. See the guidelines under F03.

All development projects wlll receive a biological evaluation. Avoid development of new roads within essential Bald Eagle and peregrine falcon habitat which would Increase publIc access and use. Restrict public access and use on existing roads as necessary to protect these habitats.

Consider fisheries management objectives in the design of stream crossings.

Construct new roads and tralls at least 1/4 mile from prairie dog towns where practical.

Minimize the area of impact of new and existing roads and trails on riparian zones and wet meadows. Locate construction equipment service areas outside the riparian areas.

Minimize road construction or reconstruction activity in elk calving areas from May 15th to June 30th.

Road construction and reconstruction projects will be designed with consideration for closure, obliteration, or other road management objectives.

L19 J01 Clearing of vegetation along rights-of-way, facilities and special use sites will be limited to that which poses a hazard to the facility and operational efficiency. Method will be determined using selection criteria in F03, Watershed Management section.

L19 Road system operation will include evaluating use and effects of use, imposing user restrictions where appropriate and necessary, and informing users through guides, signs, and personal contact.

Pursue an aggressive program for closure of unneeded roads. Road management prescriptions will be developed for all specified system roads during the first decade. These prescriptions will identify the objectives for the road management, maintenance, operation, and signing. Road maintenance levels are described in the glossary.

Roads open to vehicle use will be designated by a route marker.

All roads will be maintained at the appropriate maintenance level. Maintenance will be planned and implemented to meet management area and maintenance level objectives and will be prioritized by the following needs:

1. Correction of unsafe conditions.
2. Correction of resource damage.
3. Capability to serve intended use.
4. User comfort.

Require commercial users to maintain roads commensurate with their use to prevent resource damage and deterioration of the road system. Require commercial users to pay cost recovery on forest development roads as allowed in FSM and Federal regulations.

Roads and bridges will be managed and maintained to serve administrative and management needs, while protecting public safety, resource values and facility investments.

L19 Clarify Jurisdictional responsibility for roads by issuing USDA easements to the State and counties. Cooperate with counties in obtaining deeded ROW's for Forest access roads they maintain. Acquire ROW's for Forest roads maintained by the Forest.

Close roads as necessary from December 1 to April 1 within key elk winter range. Coordinate with New Mexico Game & Fish during project planning to obtain this information.

ADMINISTRATIVE SITES

L24 L25 Maintain existing Fire, Administrative, and Other (FA & O) facilities to maximize building life and ensure safety. Conduct condition surveys on Forest Service owned facilities and prepare and accomplish work plans annually for routine maintenance.

Construct or reconstruct buildings, communication and other administrative facilities where necessary to provide needed services, including handicap access.

L46 L47 Obtain potable water samples and conduct analysis of all water systems to meet State and local regulations. Maintain potable water systems annually. Maintain waste water treatment systems at all facilities. Construct or reconstruct potable water systems and waste water systems with priority given to correcting health and safety problems. Maintain a current operations and maintenance (O&M) plan for each system.

PROTECTION

FIRE

P01 The National Fire Management Analysis System will be used to plan for and evaluate the most cost efficient fire protection organization and program for the Forest.

P02 Establish the prevention program as needed to reduce preventable person caused fires. Coordinate prevention activities with adjacent landowners and other public land managing agencies.

P03 Detection activities will be implemented as needed on Federal, State, and adjacent private lands.

P04 P07 Coordinate suppression objectives with surrounding land owners and public land agencies.

Fire suppression objectives are established for each Management Area in the Management Area specific standards and guidelines.

Suppression strategy of control, containment, or confinement will be determined for each fire, based on management objectives for the area, observed and predicted fire behavior, anticipated short and long term fire effects, expected suppression costs and resource damage losses, damage from suppression actions, safety, and smoke management concerns.

On slopes greater than 40%, avoid the use of bulldozers to construct control lines.

If fire and safety conditions permit, and prior to ground disturbance such as construction of firelines, consult with the Forest Archeologist or District para-archeologist to avoid impacts to cultural resources.

Threatened and endangered species needs will be coordinated with the District Ranger to avoid negative impacts as safety and emergency conditions permit.

P03 P08 Air traffic will be coordinated to minimize impacts on Peregrine falcon and Bald Eagle.

P09 Fires which exceed the suppression objectives are considered escape fires and appropriate response will be determined by an escape fire situation analysis. The analysis will consider at least the following:

1. Protection of life, improvements and private property.
2. Management emphasis and wildfire suppression objectives of involved and threatened management areas.
3. Suppression cost commensurate with protected resource value.
4. Effects on air quality and watershed.
5. Social acceptance of acreage burned.
6. Impacts an cultural resources.
7. Impacts on threatened and endangered species.

P11 P12 P13 Prescribed fire, using planned and unplanned ignitions, will be used to enhance and accomplish resource objectives, particularly in fire dependent ecosystems.

Activity created fuels and natural fuels will be treated to a level that will allow maximum tolerable loss objectives to be met at the 65^{th} percentile rate-of-spread with the existing fire protection organization.

Firewood harvest will be the preferred method of fuel reduction.

P11 Fuels treatment will be coordinated with wildlife habitat needs. Prescribed fire will be utilized to minimize high intensity fire risk in essential T&E habitat. Existing and potential snags needed for wildlife habitat will be protected.

LAW ENFORCEMENT

P24 Enforce laws firmly and with appropriate uniformity. Emphasize personal contacts to reduce firewood theft, pot hunting of cultural resources, ORV violations, and provide Forest user safety.

Improve law enforcement capabilities by training additional highly qualified law enforcement officers for the Forest,..

P25 Continue law enforcement cooperation with county, state, and federal agencies.

Use public education and cooperation as the primary prevention method for carrying out law enforcement. Advertise and maintain a contact point for the public to report suspected violations on the Forest.

P26 P27 Search and rescue operations are conducted as a supportive service under the jurisdiction of the New Mexico State Police whenever the need arises. Threatened and endangered species needs will be coordinated with the District Ranger as safety and emergency conditions permit.

INSECT AND DISEASE

P34 Detect and monitor insect and disease infestations. Evaluation of impacts will consider positive as well as negative impacts affecting the forest. When suppression action is appropriate the selected management activity will be on a site specific basis. The method of control utilized will be determined through the NEPA process.

P34 E03 Prevent or reduce serious, long lasting hazards and damage from pest organisms as they effect management objectives by using a systematic decision-making process. The resultant actions will be developed after a careful consideration of pest-host relationships and resource management objectives. Conscientiously weigh both the positive and negative impacts of pest outbreaks. These impacts include creating and maintaining species diversity, different successional stages, and enhancing the natural function of different ecosystems. Also, consider economic costs and benefits, and impacts on social and management objectives. The underlying principle in the evaluation and eventual choice of strategies is that, in the long-term, they be ecologically acceptable and compatible with the forest ecosystem and the multiple use objectlves of the plan.

FORESTWIDE

In evaluating management projects, the Forest should apply the process and principles developed by the Integrated Forest Protection working group, which is integrated into the NEPA process in FSH 1909.15.

IFP is a refinement of IPM which focuses management on the forest ecosystem and its complex of pest organisms and weighs all aspects of the ecology of the pest-host system. A very important aspect of this process is to evaluate the impact of pests in terms of management goals set for specific forest stands. Under this approach, situation specific prescriptions will be developed which may utilize a combination of techniques including, as appropriate, natural controls. Harvesting, use of resistant tree species, maintenance of diversity, removal of damaged trees, and judicious use of pesticides are other examples of management techniques.

Prioritize suitable forest acres for silvicultural management through established hazard susceptibility rating systems. Habitat requirements for TES species will take precedence over disease/insect treatment needs and cover requirements of non-TES species.

Specific direction for the management of Dwarf Mistletoe follows:

1. In Ponderosa Pine and Mixed conifer types, integrate dwarf mistletoe surveys into stand examinations.
2. Prioritize stands being considered for harvest utilizing the latest hazard rating techniques.
3. Remove infected overstories as soon as regeneration is established and removal is appropriate from other resource or economic considerations.
4. Thin understories to appropriate density stocking levels by removing infected understory trees.

Specific direction for the management of the Spruce Beetle follows:

1. Remove stands from high risk conditions, when doing so is consistent with other resource objectives. High risk stands are generally overmature and decadent.
2. Low risk stands will generally exhibit these traits:
    - Average diameter of less than 12”.
    - Basal area of less than 100.
    - Less than 50 percent of the canopy will be spruce.
    - The site index will be between 40 and 80.
    - After harvest slash disposal the residual fuel loading will be free of material 6” in diameter or larger.

The management strategy for Western Spruce Budworm is as follows:

Scoping, public involvement, and environmental analysis will be completed prior to undertaking any proposed project. Due consideration to all suppression and control techniques throughout the NEPA process will be accomplished to determine the social, economic, ecological, and environmental consequences. It will always be our policy to select the individual method or combination of methods that best resolves the circumstances of a given situation. In general, it appears that vegetation management will yield the best long term results. However, in certain situations direct suppression measures may be appropriate. The following steps are to be considered in the environmental analysis (NEPA) process:

1. Timber sale planning will place a priority on high risk mixed-conifer stands, so long as the area proposals are consistent with Forest Plan resource objectives.

2. Silvicultural systems will be in keeping with Regional and Forest Plan even-aged management techniques in the mixed conifer type on available and suitable acres. This can include the following activities:

    a. Where it is ecologically sound, favor non-host species for the new or residual stand.

    b. Patch cutting, followed by site preparation, broadcast burning, and planting a mixture of ponderosa pine and Douglas-fir.

    c. Regeneration cuts which retain a uniformly spaced stand composed principally of dominant and co-dominant Douglas-flr. Advanced regeneration Is destroyed by tractor scarification or underburnlng. Regeneration is accomplished by natural seed fall and/or planting of ponderosa pine. The overstory is removed as soon as the regeneration is established.

    d. Regeneration cuts which retain a mixture of species as seed source. Dominant and co-dominant, dwarf mistletoe free trees are used as seed source; advanced reproduction will be protected during site preparation and will be supplemented by natural seed fall.

e. Removal of all trees larger than sapling size. Advanced regeneration to be protected during logging. Supplemental planting of ponderosa pine and Douglas-fir on all disturbed, understocked areas.

3. On slopes or terrain that is unsuitable for harvest, or unavailable for silvicultural treatment for whatever reason, monitor the outbreak but, generally, take no direct suppression action.

4. In the event that direct suppression is chosen as a method of controlling an insect outbreak, and microbial insecticides such as B.t. (Bacillus thurengensis) are predicted to be effective, economical, and environmentally acceptable, then those agents will be favored over all other registered insecticides.

P35 When pesticides are used for pest control, project plans will contain appropriate and necessary monitoring procedures and mitigation measures. Depending on the situation, monitoring procedures might include some or all of the following:

1. Measure effectiveness of treated areas
2. Determine affects on non target organisms
3. Determine affects on water quality
4. Determine, if possible, within resource and budget constraints the amount, and effects of, pesticide that enters the soil or air.

P34 P39 E03 Actively inform and involve the public in all work dealing with forest insects or diseases that are, or may become areas of public concern.

Conduct annual surveys to detect important insects and diseases. Supplement surveys by training field-going personnel to recognize insects and diseases, to understand the role these organisms play in forest ecosystems, and the importance of early detection. When conditions warrant, conduct evaluations designed to develop alternatives to prevent or reduce damage to acceptable levels.

MANAGEMENT AREA A

MANAGEMENT AREA A

DESCRIPTION

This management area consists primarily of those Forest lands suitable and capable of growing commercial timber. These areas also provide primary wildlife habitat for deer, elk, turkey, and other species and contain cold water fisheries. It contains Ponderosa Pine, Mixed Conifer, Spruce and Aspen analysis areas. These areas are located throughout the Forest and contain about 40% of the Forest's suitable timber.

MANAGEMENT EMPHASIS

Emphasis is on timber production and enhancement of wildlife habitat diversity consistent with other resource integration. Grazing capacity is generally transitory in nature but there are allotments in intermingled grasslands. Roaded dispersed recreation experiences are emphasized. Firewood is provided as a by-product of timber harvest activities.

Land Suitability	Acres
Total suitable timber	154,955
Total Management Area	263,107

MANAGEMENT AREA A

STANDARDS AND GUIDELINES — In addition to the forest-wide standards and guidelines, the following specific standards and guidelines will apply to this management area:

PROGRAM ELEMENT	ACTIVITY MIH CODE	MANAGEMENT AREA A STANDARDS AND GUIDELINES
RECREATION	A08	These lands are generally open to ORV travel except for the restrictions and closures displayed on the ORV map. Manage for ROS settings of Roaded Natural and Semi-Primitive Motorized. The difference will be based on road development standards, maintenance levels, and open road densities. Acreage objectives for each are: Roaded Natural: 108, 340 Semi-Primitive Motorized: 162,002
	A13	Pending final approval of the Continental Divide Trail corridor, retain the scenic qualities of the Ojitos Canyon (roads #76, 77, 171, 471) and Cecilia Creek (trail #31) segments by managing for a VQO of Retention in the foreground seen area. For foreground retention Standards and Guidelines, see Management Area "C". Manage for VQO's according to the levels identified in the Forest Visual Resource Inventory. In addition to those sites and trails noted above, the foregrounds of the following will be managed to a VQO of Retention: Road #60 & Trail #214 Road #113 & Trail #266 The resulting acreage objectives for each VQO are: Retention 25,939 Partial Retention 85,978 Modification 102,748 Maximum Modification 55,677

MANAGEMENT AREA A

WILDLIFE	C01	Wildlife emphasis is on providing even distribution of age classes in forested communities and improved fisheries. Stands providing forage and cover will be spatially designed to enhance wildlife values. Identified elk calving areas should receive special consideration to retain suitable habitat characteristics. Adjacent drainages should not be logged simultaneously to provide topographic screening of the activity noise. Entries should be scheduled to avoid peak elk use periods and to minimize duration of road building and logging activity. Unpiled slash accumulations should be less than 1.5 feet in height, where slash accumulations will significantly impede use of the area by big game animals.
RANGE	D01 D02	Allotment plans typically utilize level B or C management to achieve management area objectives.
TIMBER	E00	Timber emphasis will be to treat stands to provide a uniform age class distribution, including old growth and uneven-age. Priority of treatment will be: 1. Sanitation and salvage 2. Management of insects and diseases 3. Regeneration of mature and overmature stands with high site index values.
	E06 E07	All timber management activities will be planned and implemented to avoid or properly mitigate any disturbance to any known archeological sites.
MINERALS	G04	Mineral Leasing Category - Standard.
LANDS	J01	This management area is unclassified for utility corridors.
FACILITIES	L01 L04 L08 L12 L19	Roads generally will be constructed, reconstructed, maintained, or closed to support the timber and wildlife emphasis of this management area. Road use will be managed with the objective of limiting open road density to 1.0 to 2.5 miles per square mile.
PROTECTION	P01 P07	The suppression objective is to control 90% of the high intensity (4' + flame length) wildfires at 75 acres or less. Maximum loss from high intensity fires is 1,350 acres in this management area per decade. The suppression objective for low intensity (less than 4' flame length) wildfires is to protect plantations less than 40 years old.

MANAGEMENT AREA A

P11 P12 P13 Fuel treatment methods which are commensurate with protection of the timber base and maintenance of wildlife habitat are acceptable.

Prescribed fire will be used primarily for site preparation, fuels reduction and enhancement of wildlife habitat.

MANAGEMENT AREA B

MANAGEMENT AREA B

DESCRIPTION

This management area consists of those Forest lands that provide key deer and elk winter range, some of the essential habitat for threatened and endangered species, or other areas important to game and non-game wildlife. It contains Ponderosa Pine, Mixed Conifer, Spruce and Aspen analysis areas, representing approximately 8% of the Forest's suitable timber. These management areas are distributed throughout the Forest.

MANAGEMENT EMPHASIS

The emphasis in this area is on wildlife habitat improvement and key species habitat protection. Grazing and timber harvest activities occur where compatible with the primary emphasis of this area. Recreation is mostly of a dispersed roaded nature. Timber activity slash will be provided for wildlife and firewood purposes.

Land Suitability	Acres
Total suitable timber	30,739
Total Management Area	69,123

MANAGEMENT AREA B

STANDARDS AND GUIDELINES — In addition to the forestwide standards and guidelines, the following specific standards and guidelines will apply to this management area:

PROGRAM ELEMENT	ACTIVITY MIH CODE	MANAGEMENT AREA B STANDARDS AND GUIDELINES
RECREATION	A08	These lands are generally open to ORV travel except for the restrictions and closures displayed on the ORV map. Additional closures or restrictions will be implemented as necessary to protect winter range habitat. Manage for ROS settings of Roaded Natural and Semi-Primitive Motorized. The difference will be based on road development standards, maintenance levels, and open road densities. Acreage objectives for each are: Roaded Natural: 25,344 Semi-Primitive Motorized: 36,544
	A13	Manage for VQO's according to the levels identified in the Forest Visual Resource Inventory. In addition to those sites and trails noted above, the foregrounds of the following will be managed to a VQO of Retention (for foreground retention standards, see Management Area C): Road #113 & Trail #223 Road #60 The resulting acreage objectives for each VQO are: Retention: 6,193 Partial Retention: 20,657 Modification: 29,045 Maximum Modification: 5,993
WILDLIFE	C01	Wildlife emphasis is to enhance big game habitat by improving winter forage. The Banco Largo area will be evaluated and projects developed to enhance waterfowl habitat. Improve 1200 acres of big game winter habitat in the San Miguel and Banco Largo areas. Harvesting and other appropriate techniques to increase early seral stage conditions will be used.

MANAGEMENT AREA B

		Enhance mast production and appropriate grasses for turkey winter habitat.
	D01 D02	Allotment plans typically utilize Level B or Level C management to achieve management area objectives.
TIMBER	E06 E07	All timber management activities will be planned and implemented to avoid or properly mitigate any disturbance to any known archeological sites.
	E06	The design of cutting units will enhance their value for providing effective edge for wildlife by utilizing appropriate length, width, and configuration.
		Manage 75% of the forested acreage to have a minimum of 220 snags per 100 acres.
		Design harvest plans to provide thermal and hiding cover in proximity to forage.
		Firewood should be managed to retain snags and on-the-ground large diameter logs.
		Manage oak communities for early seral stages (wildlife values) and late seral stages (non-game wildlife values).
WATERSHED	F03	Seeding mixtures will contain a high percentage of native browse & AIR species, forbs, and grasses palatable to wildlife.
MINERALS	G04	Mineral Leasing Category - Standard.
LANDS	J01	This management area is unclassified for utility corridors.
FACILITIES	L01 L04 L19	Roads will be constructed, reconstructed, maintained or closed L08 L12 to enhance wildlife habitat effectiveness and support timber harvest activities. Road use will be managed with the objective of limiting open road density to 0.3 to 1.5 miles per square mile.
PROTECTION	P01-P07	The suppression objective is to control 90% of the high intensity (4' + flame length) wildfires at 75 acres or less. Maximum loss from high intensity fires is 316 acres in this management area per decade.
		The suppression objective for low intensity (less than 4' flame length) wildfires is to protect plantations less than 40 years of age. For low Intensity wildfires outside of such plantations, wildlife biologist input will be gained in determining size constraints.

MANAGEMENT AREA B

Air traffic will be coordinated to minimize impacts on T&E species.

P11 P12 P13 Prescribed fire will be used primarily for fuels reduction and wildlife habitat enhancement.

MANAGEMENT AREA C

DESCRIPTION

These are the transportation corridors and areas which provide essential habitat for threatened and endangered species along with outstanding opportunities for developed recreation and viewing scenery. Many of the existing developed recreation sites and much of the fishing recreation use occurs here. This area may be found throughout the Forest in a variety of ecosystems and contains about 6% of the Forest's suitable timber. This area contains many of the Forest's large rivers and associated riparian ecosystems.

MANAGEMENT EMPHASIS

Emphasis is on enhancement of visual quality and developed recreation opportunities while protecting essential wildlife habitat and riparian zones. Grazing and timber activities occur where consistent with the primary emphasis of this area.

Land Suitability	Acres
Total suitable timber	14,760
Total Management Area	89,847

MANAGEMENT AREA C

STANDARDS AND GUIDELINES

In addition to the forest-wide standards and guidelines, the following specific standards and guidelines will apply to this management area:

PROGRAM ELEMENT	ACTIVITY MIH CODE	MANAGEMENT AREA C STANDARDS AND GUIDELINES
RECREATION	A06	When developed recreation facilities are proposed in T&E habitat, a biological assessment will be obtained and a no adverse effect determination made before the project proceeds. Existing facilities located in T&E habitat will be managed to protect that habitat.
	A07	Manage the following developed recreation sites at the standard service level: Redondo Campground San Antonio Campground Paliza Campground and Group Area La Cueva Picnic Area Battleship Rock Picnic Area Jemez Falls Campground (when reconstructed) Lower Jemez Picnic Areas (when developed) All others in this management area will be managed at a less than standard service level.
	A08	Manage for Recreation Opportunity Settings of Roaded Natural along road corridors and Rural surrounding developed sites. These lands are generally open to ORV travel except within the boundaries of developed recreation sites, and for the areas displayed on the ORV map. In addition to those criteria for ORV restriction or closure listed in the Forestwide standards, the following priority criteria will apply:

1. Effects on the visual resource which do not meet the VQO of Retention.
2. Degradation of T&E or sensitive species habitat.
3. Degradation of the riparian ecosystem.
4. Degradation of important values in proposed recreation sites.

A13 In order to maintain the scenic qualities of this management area, manage for a Visual Quality Objective (VQO) of Retention for all resource activities. Develop Viewshed Corridor Plans as a part of project level planning for all vegetation management projects.

Utilize Vegetation Management Prescriptions I-V to promote long-term visual diversity, within the following area guidelines:

I: no more than 45% of the viewshed
II: at least 50% of the viewshed
III – V: no more than 5% of the viewshed

Stand and opening sizes are determined by the scale of the landscape, distance from the road or trail (immediate foreground zone = 5 chains, other foreground = seen area up to ½ mile away), design speed of road, or travel speed of the viewer. Opening sizes will also be based on Visual Absorption Capability (VAC), as follows:

Visual Absorption Capability:	Low	Medium	High
Critical Viewing Distance:	IF/Fg/Mg/Bg	IF/Fg/Mg/Bg	IF/Fg/Mg/Bg
Maximum Opening Size (acres):	1/1/2.5/5	1/2.5/5/10	2/5/10/15

IF = Immediate Foreground
Fg = Foreground
Mg = Middle ground
Bg = Background

Adjacent stands should vary in age by at least 30 years.

Retain and encourage existing groupings of gambel oak, and other understory vegetation to promote visual diversity. Allow planting/seeding of indigenous understory species.

MANAGEMENT AREA C

		Dispose of activity generated slash in the immediate foreground zone within one year of project completion, with the exception of a maximum of five logs per acre of minimum 12" diameter and 15' length for wildlife. Other such treatment will be done according to the Viewshed Corridor Plan.
		Variation of the above visual guidelines may occur when prescribed in the viewshed corridor plan.
WILDLIFE	C01	Wildlife emphasis is to enhance threatened or endangered species habitat, riparian habitat, and fisheries.
		Coordinate with recreation development and viewshed corridor planning to reduce impacts on T&E and sensitive species.
		Coordinate with NM Game & Fish so that beaver populations are managed within riparian objectives.
		Threatened or endangered species habitat management will emphasize reducing human disturbance and enhancement of riparian communities.
	C02	Changes in habitat diversity will be consistent with visual resource management.
		Plant cottonwoods where appropriate to enhance Bald Eagle winter habitat effectiveness.
		Vertical diversity will be emphasized over horizontal diversity.
		Cover will be provided at key corridor crossings to enhance big game migration.
		Enhance wildlife viewing opportunities through habitat improvements.
RANGE	D01 D02	Allotment plans typically utilize Level C or Level D management to achieve management area objectives.
	D07	Within approved allotment management plans, emphasis will be given to proper utilization of the riparian zone.
TIMBER	E00	Timber harvesting will be planned and accomplished in accordance with an approved Viewshed Corridor Plan. Harvesting activities and slash disposal work will be designed to achieve VQO standards of Retention.
	E01	Manage timber stands under uneven-aged or extended rotation even-aged systems to provide or retain visual diversity and benefit non-game species.

MANAGEMENT AREA C

Created openings will not have linear openings in excess of 300 feet per mile along each side of sensitivity level 1 roads and trails.

Regenerate aspen by patch cutting for wildlife and visual diversity as stands become decadent or as natural succession replaces them with conifers. Manage for a minimum of 5% aspen in timber component where feasible.

Locate decks and landings outside of the immediate foreground zone whenever feasible. Restore visible landings to original or characteristic contours and revegetate within one year of project completion.

	E04	Reforestation projects will be designed to enhance visual landscape variety.
		Reforestation activities will be coordinated to eliminate adverse effects on T&E species.
	E05	Timber Stand Improvement projects will be designed to provide for a variety of tree sizes and densities in project areas which will create or maintain visual variety as well as improving growing conditions.
		TSI activity levels will be coordinated to eliminate adverse effects on T&E species.
	E06	Manage 75% of the forested acres to have 300 snags per 200 acres. In addition, "wolf trees" will receive protective preference for snag recruitment as safety considerations permit.
WATERSHED & AIR	F03	Seeding mixtures will contain a high percentage of berry producing shrubs, colorful plants, and wildflowers.
MINERALS	G01	Sources for mineral materials, such as sand and gravel, are allowed only when they will meet the visual quality objective of Retention within one year of project initiation.
	G04	Mineral Leasing Category - Limited Surface Use.
LANDS	J01	Classification for powerlines in excess of 69Kv: Avoidance. Where it is not environmentally feasible to avoid this management area because of topographic obstacles or unacceptable impacts elsewhere on a proposed corridor alternative, utilities in excess of 69Kv located here may require extensive mitigation measures such as modified structures, color, masking, screen plantings, and line relocation.

All powerlines 69Kv or less must utilize location, design, and construction practices, including burial unless infeasible, to meet the VQO of Retention.

FACILITIES L01 Planning of roads which traverse slopes within the viewshed will occur concurrent with the development of the viewshed corridor plan.

L01 L04 Roads will be constructed, reconstructed, maintained or closed L08 L12 to support the objectives of high quality recreation access for a L19 variety of vehicles, protection of riparian zones and protection of T&E habitat. Road use will be managed with the objective of limiting open road density to 1.0 to 2.5 miles per square mile.

PROTECTION P01-P07 The suppression objective is to control 90% of the high intensity (4' + flame length) wildfires at 15 acres or less, and contain low intensity (less than 4' flame length) wildfires at 75 acres or less.

Consider methods other than use of tractors for control line construction, making maximum use of natural features for control lines.

Air traffic will be coordinated to minimize impacts on T&E species.

P11 P12 Fuel treatment methods with effects lasting no longer than one P13year are acceptable.

Fuels reduction will be emphasized around developed sites.

Prescribed fire will be used primarily to maintain visual quality and to maintain or create vegetative diversity in conjunction with other treatments.

MANAGEMENT AREA D

DESCRIPTION

These are primary transportation corridors normally associated with state highways and high volume roads. They provide outstanding opportunities for developed recreation and viewing scenery as they occur throughout a variety of ecosystems. Much of the fishing recreation use and many of the potential as well as existing developed sites occur in this area. This area contains about 5% of the Forest's suitable timber.

MANAGEMENT EMPHASIS

Emphasis is on enhancement of visual quality and developed recreation opportunity. Grazing and timber activities occur where consistent with the primary emphasis of this area.

Land Suitability	Acres
Total suitable timber	15,009
Total Management Area	53,038

STANDARDS AND GUIDELINES

In addition to the forestwide standards and guidelines, the following specific standards and guidelines will apply to this management area:

PROGRAM ELEMENT	ACTIVITY MIH CODE	MANAGEMENT AREA D STANDARDS AND GUIDELINES
RECREATION	A07	Manage the following developed recreation sites at the standard service level: Panchuela Campground Field Tract Campground Jack's Creek Campground Black Canyon Campground Holy Ghost Campground All others in this management area will be managed at a less than standard service level.
	A08	Manage for Recreation Opportunity Settings of Roaded Natural along road corridors and Rural surrounding developed sites. These lands are generally open to ORV travel except within the boundaries of developed recreation sites, and for the areas displayed on the ORV map. In addition to those criteria for ORV restriction or closure listed in the Forestwide standards, the following priority criteria will apply: 1. Effects on the visual resource which do not meet the VQO of Retention. 2. Degradation of the riparian ecosystem. 3. Degradation of the important values in proposed recreation sites.
	A13	Manage for a Visual Quality Objective (VQO) of Retention for all resource activities. Develop Viewshed Corridor Plans as a part of project level planning for all vegetation management projects.

MANAGEMENT AREA D

Utilize Vegetation Management Prescriptions 1-!V to promote long-term visual diversity, within the following area guidelines:

I: no more than 45% of the viewsbed
II: at least 50% of the viewshed
III – V: no more than 5% of.tbe vIewshed

Stand and opening sizes are determined by the scale of the landscape, distance from the road or trail (immediate foreground zone = 5 chains, other foreground = seen area up to 1/2 mile away), design speed of road, or travel speed of the viewer. Opening sizes will also be based on Visual Absorption Capability (VAC), an follows:

Visual Absorption Capability:	Low	Medium	High
Critical Viewing Distance:	IF/Fg/Mg/Bg	IF/Fg/Mg/Bg	IF/Fg/Mg/Bg
Maximum Opening Size(acres):	1/1/2.5/5	1/2.5/5/10	2/5/10/15

IF = Immediate Foreground
Fg = Foreground
Mg = Middleground
Bg = Background

Adjacent stands should vary in age by at least 30 years.

Retain and encourage existing groupings of gambel oak, and other understory vegetation to promote visual diversity. Allow planting/seeding of indigenous understory species.

Dispose of activity generated slash in the immediate foreground zone within one year of project completion, with the exception of a maximum of five logs of minimum 12" diameter and 15’ length for wildlife. Other such treatment will be done according to the Viewshed Corridor Plan.

Variation of the above visual guidelines may occur when prescribed in the Viewshed Corridor Plan.

WILDLIFE C01 Wildlife emphasis to to enhance riparian habitat, fisheries and big game winter range.

Evaluate the impact of permitted summer homes on wildlife winter habitat, and consider in all permit tenure analysis processes.

C02 Changes in habitat diversity will be accomplished consistent with visual resource management.

Vertical diversity will be emphasized over horizontal diversity.

MANAGEMENT AREA D

		Cover will be provided at key corridor crossings to enhance big game migration.
		Enhance wildlife viewing opportunities through habitat improvements.
RANGE	D01 D02	Allotment plans typically utilize Level C or Level D management to achieve management area objectives.
	D07	Within approved allotment management plans emphasis will be given to proper utilization of the riparian zone.
TIMBER	E00	Timber harvesting will be coordinated with an approved Viewshed Corridor Plan. Harvesting activities and slash disposal work will be designed to achieve VQO standards of Retention.
	E01	Manage timber stands under uneven-aged or extended rotation even-aged systems to provide or retain visual diversity and benefit non-game species
		Created openings will not have linear openings In excess of 300 feet/mile along each side of sensitivity level 1 roads and trails.
		Regenerate aspen by patch cutting for wildlife and visual diversity as stands become decadent or as natural succession replaces them with conifers. Manage for a minimum of 5% aspen in timber component where feasible.
		Locate decks and landings outside of the immediate foreground zone whenever feasible. Restore visible landings to original or characteristic contours and revegetate within one year of project completion.
	E04	Reforestation projects will be designed to enhance visual landscape variety.
	E05	Timber stand improvement projects will be designed to provide for a variety of tree sizes and densities in project areas which will create or maintain visual variety as well as improving growing conditions.
WATERSHED & AIR	F03	Seeding mixtures will contain a high percentage of berry producing shrubs, colorful plants, and wildflowers.
MINERALS	G01	Sources for common variety minerals, such as sand and gravel, are allowed only when they will meet the visual quality objective of Retention within one year of project initiation.
	G04	Mineral Leasing Category - Limited Surface Use.

LANDS	J01	Classification for powerlines in excess of 69Kv: Avoidance. Where it is not environmentally feasible to avoid this management area because of topographic obstacles or unacceptable impacts elsewhere on a proposed corridor altenative, utilities in excess of 69Kv located here may require extensive mitigation measures such as modified structures, color, masking, screen plantings, and line relocation. Powerlines of 69Kv or less must utilize location, design, and construction practices, including burial whenever feasible, to meet the VQO of Retention.
FACILITIES	L01	Planning of roads which traverse slopes within the viewshed will occur concurrent with the development of the viewshed corridor plan.
	L01 L04 L08 L12 L19	Roads will be constructed, reconstructed, maintained or closed to support the objectives of high quality recreation access for a variety of vehicles and protection of riparian zones. Road use will be managed with the objective of limiting open road density to 1.0 to 2.5 miles per square mile.
PROTECTION	P01-P07	The suppression objective is to control 90% of the high intensity (4’ + flame length) wildfires at 15 acres or less, and contain low intensity (less than 4' flame length) wildfires at 75 acres or less. Consider methods other than use of tractors for control line construction, making maximum use of natural features for control lines.
	P11-P13	Fuel treatment methods with effects lasting no longer than one year are acceptable. Fuels reduction will be emphasized around developed sites. Prescribed fire will be used primarily to maintain visual quality and to maintain or create vegetative diversity in conjunction with other treatments.

MANAGEMENT AREA E

DESCRIPTION

This management area consists of those Forest lands which provide a broad range of recreation opportunities and visual quality. It contains analysis areas that range from pinyon-juniper to spruce fir, representing about 15% of the suitable timber on the Forest. These areas provide scenic backdrops from highways or communities and contain important dispersed recreation areas or minor developed recreation sites. They also contain a wide array of game, non-game, and fisheries recreational opportunities.

MANAGEMENT EMPHASIS

Emphasis is on providing dispersed recreation opportunities, maintaining visual quality and timber and firewood production. Grazing activities vary in intensity over this area. Emphasis is on maintenance or enhancement of wildlife habitat diversity.

Land Suitability	Acres
Total suitable timber	39,327
Total Management Area	119,833

MANAGEMENT AREA E

STANDARDS AND GUIDELINES — In addition to the forestwide standards and guidelines, the following specific standards and guidelines will apply to this management area:

PROGRAM ELEMENT	ACTIVITY MIH CODE	MANAGEMENT AREA E STANDARDS AND GUIDELINES
RECREATION	A08	These lands are generally open to ORV travel except for the restrictions and closures displayed on the ORV map. Manage for ROS settings of Roaded Natural and Semi-Primitive Motorized. The difference will be based on road development standards, maintenance levels, and open road densities. Acreage objectives for each are: Roaded Natural: 59,637 Semi-Primitive: 60,196
	A11 A12	Pending final approval of the Continental Divide Trail corridor, retain the scenic qualities of the Los Pinos (Trail #46 and Road #95) segments by managing for a VQO of Retention in the foreground seen area.
	A13	Manage all activities to meet a Visual Quality Objective (VQO) of Partial Retention for the general area. In addition to those sites and trails noted above, the seen areas of the following will be managed to a VQO of Retention (see Management Area C). Foregrounds of all developed recreation sites Foreground and middleground of I-25 Foreground of NM #44 on Cuba Mesa Foreground of Road #144 on Espanola R.D. Foreground of Road #376 on Jemez R.D. Foreground of Road #123 on Pecos R.D. The resulting acreage objectives for each VQO are: Retention: 15,224 Partial Retention: 104,609

MANAGEMENT AREA E

	A13 E07	A maximum of 20% of the Partial Retention (PR) Foreground and Middleground areas will be regenerated this planning period. At least 5% of the Partial Retention Foregrounds of trails and roads will receive Vegetation Management Prescription II to promote old growth components. Maximum opening size in these areas will be based on VAC, as follows:

Visual Absorption Capability:	Low	Medium	High
Critical Viewing Distance:	Fg/Mg/Bg	Fg/Mg/Bg	Fg/Mg/Bg
Maximum Opening Size (acres):	1/5/10	10/15/25	15/25/40

WILDLIFE	C01	Wildlife emphasis is to enhance game and non-game habitat and fisheries in a manner which contributes to the recreation experience.
RANGE	D01 D02	Allotment plans typically utilize Level B or Level C management to achieve management area objectives.
TIMBER	E00	Timber emphasis will be to treat stands to provide a uniform age class distribution, including old growth and unevenage. Priority for treatment will be: 1. Sanitation and salvage 2. Insect and disease management 3. Regeneration of mature and overmature stands with high site index values.
	E05	Timber stand improvement projects will be designed to provide for a variety of tree sizes and densities in project areas which will create or maintain visual variety as well as improving growing conditions.
	E06 E07	Timber sales will be prepared and harvested to maintain or enhance visual variety and achieve VQO standards for retention and/or partial retention.
MINERALS	G04	Mineral Leasing Category - Standard.
LANDS	J01	This management area is unclassified for utility corridors. All powerlines will utilize mitigation measures appropriate to the Visual Quality Objective.
FACILITIES	L01 L04 L08 L12 L19	Roads will be constructed, reconstructed, maintained or closed to support a wide variety of recreation experiences and support timber activities. Road use will be managed with the objective of limiting open road density to 1.0 to 2.5 miles per square mile.

MANAGEMENT AREA E

PROTECTION	P01-07	The suppression objective is to control 90% of the high intensity (flame length 4’ +) wildfires at 15 acres or less in the foreground and 75 acres or less elsewhere, and low intensity (flame length less than 4') wildfires at 75 acres or less. Consider methods other than the use of tractors for fireline construction in foreground areas while making maximum use of natural features.
	P11 P12 P13	Prescribed fire will be used to maintain or develop vegetative diversity for visual and wildlife benefits, fuels reduction, and site preparation.

MANAGEMENT AREA G

MANAGEMENT AREA G

DESCRIPTION

These are primarily the low elevation grasslands, pInyon-juniper, oak, and lower ponderosa pine areas with flat to steep terrain. They are geographically widespread and provide much of the Forest's forage and firewood. These areas contain key wildlife habitat for some woodland and shrub dependent species.

MANAGEMENT EMPHASIS

Emphasis in this area is on key wildlife habitat protection, habitat Improvement, and forage and firewood production. Recreational opportunities are dispersed and consist of firewood and pinyon nut gathering, hunting, and recreational driving.

Land Suitability	Acres
Total suitable timber	0
Total Management Area	226,992

STANDARDS AND GUIDELINES

In addition to the forestwide standards and guidelines, the following specific standards and guidelines will apply to this management area:

PROGRAM ELEMENT	ACTIVITY MIH CODE	MANAGEMENT AREA G STANDARDS AND GUIDELINES
RECREATION	A08	These lands are generally open to ORV travel except for the restrictions and closures displayed on the ORV map. Manage for ROS settings of Roaded Natural and Semi-Primitive Motorized. Acreage objectives for each are: Roaded Natural: 56,748 Semi-Primitive Motorized: 170,244

MANAGEMENT AREA G

Allotment management planning will minimize the effect of gates and other range structures on recreation travel.

A13 Manage for VQO's according to the levels identified in the Forest Visual Resource Inventory. In addition to the site noted above, the foreground of the Road #25 and the area of the Caja viewed from Bandelier National Monument will be managed to a VQO of Retention.

The resulting acreage objectives for each VQO are:

Retention:	12,199
Partial Retention:	40,144
Modification:	27,444
Maximum Modification:	147,205

WILDLIFE C01 Evaluate these lands and identify opportunities to contribute to threatened and endangered species recovery objectives.

Protect known populations of grama grass cactus and manage to increase and recover the population. Manage grazed lands to provide suitable habitat for re-introduction of grama grass cactus. Determine the rate of rodent induced mortality and take appropriate action in nursery plots for grama grass cactus.

Improve elk and turkey winter ranges through the harvest of green pinyon-juniper.

Manage woodland stands in treated grasslands to perpetuate their diversity contribution to non-game species habitat.

Grazing management should maintain or enhance woody shrubs and half shrubs such as winter fat and skunkbush for wildlife forage or cover.

Manage for perches distributed throughout the area, to meet songbird and raptor needs.

In the Caja, manage prairie dogs to maintain viable populations.

In the Cerro Pelon area, manage livestock to maintain or enhance elk and deer winter range. Manage roads to minimize disturbance in big game winter range.

RANGE D01 D02 Allotment plans typically utilize Level C or Level D management to achieve management area objectives.

MANAGEMENT AREA G

	D03	The location of the Pinyon/lunlper retreatment and maintenance areas will be determined by the following criteria: 1. Site has a soil revegetation potential of moderate or high. 2. Slopes art generally less than 15 percent 3. Soils have a low or moderate erosion hazard rating. 4. Treatment methods will be cost efficient. 5. Retreated areas will be consistent with visual and wildlife objectives.
	D07	The Caja Wild Horse Territory will be managed to protect wild horse habitat and to maintain a thriving ecological balance.
TIMBER	E00	All green pinyon and juniper firewood harvest activities will be planned and executed according to integrated stand management principles. In pinyon woodland suitable for firewood harvest manage to retain at least 3 mast producing mature junipers per acre for non-game wildlife. In juniper woodland suitable for firewood harvest retain. at least 3 mature pinyona per acre for wildlife purposes.
	E06 E07	Pinyon and juniper firewood regeneration harvesting will be done in 1-26 acre stands. Intermediate cuts will be in 10 to 100 acre stands, with the preferred size being 20 to 80 acres. The rotation age will be 300 years.
WATERSHED & AIR	F03	Allotments in this management area will receive priority for watershed condition Improvement after a satisfactory allotment plan Is approved.
	F04	Use available activity generated funds In firewood areas to close or obliterate unneeded trav*lways.
MINERALS	G04	Mineral Leasing Category - Standard.
LANDS	J01	This management area I* unclassified for utility corridors.
FACILITIES	L01 L04 L08 L12 L19	Roads will be constructed, reconstructed, maintained. or closed to support wlldllfe habitat protection and enhancement, and utilization of forage and firewood. Road use will be managed with the objective of limitlug open road density to 0.3 to 1.5 all** per square mile.

MANAGEMENT AREA G

PROTECTION	P01-07	Wildfire suppression strategies will make maximum use of natural control features while maIntaining the sustained long-term yield firewood base and the forage base needed for the remainder of the grazing season. Protection will be provided to TLE plant Inclusions from both wildfire and suppression efforts. The suppression objective within firewood areas will be to control 90% of high Intensity (41* flame length wlidfires) at 100 acres or less.
	P11 P12 P13	Prescribed fire may be used to maintain treated grasslands and enhance firewood production or w1ldlIfe habitat.

MANAGEMENT AREA H

DESCRIPTION

The four Congressionally declared wilderness areas, Chama River Canyon, Dome, Pecos, and San Pedro Parks, are included in this management area. There is great natural diversity among these areas, from rugged alpine peaks with cold cirque lakes and large open grassy parks, to dissected systems of canyons and mesas. Water is a dominant feature in most of these areas, with many free-flowing steams and rivers offering recreation opportunities from whitewater boating to fishing. Vegetation ranges from alpine tundra and spruce-fir communities to pinyon-juniper and grasslands. These combinations provide important habitat for a wide array of threatened & endangered and other wildlife species.

MANAGEMETN EMPHASIS

Management emphasis in these areas is to preserve wilderness character and values. They will be managed to retain their "primeval wild character and influence, without permanent improvements or habitation and … protected … to preserve [their] natural conditions." Primitive recreation opportunities, wildlife habitat management, grazing, and fire management will occur only when consistent with these values and where historically established.

Land Suitability	Acres
Total suitable timber	0
Total Management Area	292,329

STANDARDS AND GUIDELINES

In addition to all appropriate standards and guidelines already stated in the Forestwide Standards and Guidelines, the following will apply to all portions of the wildernesses managed by the Santa Fe National Forest, including those portions of the Pecos and Chama Wildernesses under the jurisdiction of the Carson National Forest:

PROGRAM ELEMENT	ACTIVITY MIH CODE	MANAGEMENT AREA H STANDARDS AND GUIDELINES
RECREATION	A08	Management will emphasize primitive (ROS) opportunities for the entire wilderness, regardless of the current inventory status. Managerial controls may be used to maintain the desired number of people for this setting. Control measures may include closing areas, lake shores, and lake basins to overnight camping, use by reservation, permit systems, etc.

MANAGEMENT AREA H

Encourage visitors to adopt techniques. equipment, and ethics and to seek less crowded country to minimize Impacts on the wilderness resource. This includes enforcement of the "Pack It In. Pack It Out" policy and education in "no trace" wilderness camping ethic. The use of small stoves in lieu of firewood will also be encouraged.

Communicate the above concerns through: personal contacts by wilderness information specialists (WIS) or rangers. Emphasize "people contact" over regulatory signing and permit systems.

Maximum group size will be limited to 15 persons and/or 15 head of pack and saddle stock. Maximuw size of rafting groups will be limited to 20

persons.

. I

I *IMP*

Outfitter guide permits will be Issued on a case-by-case basis, according to public demand and demonstrated length of satisfactory service. until wilderness use capacities are established. A moratorium on Issuance of commercial outfitter guide permits for whitewater boating on the Rio Cham will remain In effect at least through the 1987 use season. A r*-evaluation based on user preference and physical carrying capacity studies will occur at that time.

Use of mechanical conveyances. Including mountain bicycles, Is prohibited.

Pack and saddle stock may be required to carry the~r *own feed If sufficient forage Is lacking. Only processed horse feed will be permitted In the wilderness. to prevent Introduction of non-native plant species.

Temporary electric fence corrals may be permitted for control of pack and saddle stock an & case-by-esise basis. All corrals and areas such &* picket and tether lines where stock are temporarily concentrated will be located sway from trails and moved periodically to minimize soil compaction and trampling.

Organized recreation events such as runs. games. trail endurance rides. and boat races. whether competitive or noncompetitive. will not be permitted.

A10 A11 Dealgn trail construct Ion/reconstruct Ion projects consistent with the Primitive ROS setting. and planned levels of use. Use trail system design to disperse recreationlets. away from wet meadows. riparian areas, and areas of concentrated iope.

MANAGEMENT AREA B

	A13	Manage for a Visual Ouality Objective (VOO) of Preservation. When any structural projects or facilities are deemed necessary. native or natural materials such as local rock. logo, and indigenous plant species will be used. Structures should blend with the natural surroundings as much as possible. Use routed wooden signs only.
WILDLIFE	C01	Manage wildlife habitat In a manner *which contributes* to wilderness values. Manage wilderness use to maintain or enhance TLE species habitat. Develop f Isherl*s action plane *which* coordinate Now -Mexico Department of Game and Fish goals with wilderness values. Manage for native plant and animal species and allow for re-Introduction of native species.
RANGE	D01 D02	Allotment plans typically utilize Level 8 management to achieve management area objectives. Within wilderness areas this level of management Includes the following objectives: 1. Extensive livestock management systems which use range riders or other techniques to minimize structural development'are preferred. 2. Adjustments of livestock permitted numbers may be necessary in the first decade It use cannot be balanced with capacity through Improved management.
	D05	The construction or replacement of improvements will be done for purposes of resource protection and more effective livestock management and not to accommodate increased numbers of livestock. All Improvements will be conalatent'wlth wilderness values. Avoid management. practices vhIch tend to concentrate grazing livestock in sensitive areas such as riparian zones and wet meadows. Consistent with an approved allotment management plan. occasional use of motorized equipment may be authorized by the Regional Portater. This use will normally only be parm4tted on th4s -portion* of a wilderness area where motorized use had occurred prior to the area,&. designation as a wilderness and such use will be expressly authorized in the grazing permit.

MANAGEMENT AREA H

WATERSHED & AIR	F01	In the Class I Air Ouality Areas (Pecos Wilderness except 1980 addition* and San Pedro Parks). maintain high quality visual conditions. The form. line. texture. and color of characteristic landscapes w ill be clearly distinguishable when viewed as middle ground. Cultural resources and ecosystems 'will remain unmodified by air pollutants. Impacts of air pollution generating activities will be predicted using current modelling techniques. Determine baseline Information and Identify values related to air quality In both Class I areas.
MINERALS	G06	Mineral leasing category - Withdrawn
	G07	Validity exams will be performed an existing mineral claims prior to approving a plan of operation.
		Mineral material permits will not be Issued.
HUMAN RESOURCES	B06	Volunteer. Adopt-A-Trail. and other human resource programs will be utilized where possible to augment wilderness programs.
LANDS	J01	Utility corridor* are prohibited except In accord with Section 4(d)(4)(1) of the Wilderness Act of 1964.
	J06	Post and maintain wilderness boundary lines and land survey monuments.
	J18	Acquire rights-of-way when needed to assure access *to wilderness trallbeads and rafting put-in points.
PROTECTION	P01-07	The suppression objective is to control high Intensity (flame length 41#) wildfires at 2.000-5,000 acres while making maximum use of natural features for control lines and utilizing hand tools.
		Low Intensity fire@ will have no size limitations, but will be monitored to insure they remain within wildernens resource objectives.
		Wildfires will be allowed to cross the wilderness boundary only If the objectives of the entered management area can be act.
		Protect bald eagle winter roost areas from wildfire.
		Motorized fire line building equipment will be permitted only with Regional Forester's approvalt
		Other notarized equipment may be used with approval of the Forest Supervisor If It Is necessary to meet suppression objectives or to retrieve pe rsonnal to meet suppression objectives elsewhere.

P12 Prescribed fire, using either planned or unplanned ignitions, may be used to break up unnaturally large areas of continuous fuels to create a more natural mosaic. Natural fires can then be allowed to play their ecological role with minimal intervention from protection forces. The historical mosaic of fuels created by fires is estimated to be 50 to 150 acres.

P34 Integrated forest protection activities will be limited to detection, surveillance, and reporting, except where resources outside wilderness areas are threatened. Protection plans will contain appropriate monitoring procedures and mitigation measures. The Regional Forester must approve any suppression plans.

The following standards and guidelines are specific to each wilderness area:

CHAMA RIVER CANYON WILDERNESS

A04 Locate, protect, and determine suitability for interpretation of significant cultural resources along the river corridor. The location of these sites will not be made public until such a suitability determination is made.

B01 Coordinate planning and management of the boating aspects of the Rio Chama with the Bureau of Land Management (BLM), in consultation with the New Mexico State Department of Natural Resources, Department of Game and Fish, and U.S. Fish and Wildlife Service.

Scheduled water releases from El Vado Reservoir during weekends from July to mid-September began in 1986. After a joint study of user patterns, user preferences, and effects of use on the river corridor ecosystem through 1987, the Forest will develop, jointly with the BLM, limits on outfitter guide special use authorizations, number of service days per permit, and the ratio of private boater to guided use, along with other use stipulations.

Work in coordination with other government agencies and water interests to anticipate pool fluctuations in Abiqu Reservoir and when possible preclude inundation of whitewater recreation opportunities on the area below the recommended Wild & Scenic areas.

B03 Wbitewater outfitter guides will operate on the wilderness portion of the Rio Ch- only under-special use authorization administered by the BLM. Until the updated use stipulations are developed after the 1987 season the following limits will apply:

- available only to viable 1983 permit holders;
- maximum group size of 20 people;
- targeted capacity of 200 people per day divided equally between private and commercial launches.

Emphasize visitor contact. regulation. and education for boaters prior to entering the wilderness to promote user safety. protection of the ecosystem, wilderness ethics. and a sense of unregulated freedom In the wilderness. Boating safety and environmental protection requ Ireftente will be posted at the put-in* and Included In outfitter guide special use authorizations.

The following minimal Impact procedures will be followed:

1. All parties will bury their human faces at least 50 feet from the river bank and 10 feet above the waterline. Toilet paper should be collected and carried out or burned.

2. All garbage and debrls generated from the rafting operation will bit carried out and disposed of In a lawful manner.

3. Contain campfires In firepans and carry out ashes and coals; use charcoal or driftwood for fires.

4. Avoid camping In same location repeatedly.

5. Additional restrictions, such as requiring removal of human.waste or use of charcoal only for fires. may be considered.

Recreation management will be at a standard service level In the river corridor. lose than standard elsewhere. Standard service will Include river patrol at least twice per week during the natural run-off period and once per weekend during the scheduled release period. visitor contact at the put-in point during high use weekend* and holidays. litter pick-up, and general use monitoring.

RANGE D01 Grazing will occur only during the winter period. November to May.

Allotment management plans will be Consistent wlth-wilderneas and TiLE objectives.

	D06	Maintenance of the Ojitos Spring pipeline in Ojitos Canyon by motorized equipment is permitted within the terms of the grazing allotment permit and plan.

DOME WILDERNESS

	B01	Coordinate planning and management of activities with Bandelier National Monument.
	B03	Manage all recreation areas at a less then standard service level. This includes periodic trail patrol, minor trail maintenance, and visitor contact on an opportunity basis.
RANGE	D07	Develop and implement a management plan for that portion of the Dome Wilderness which is designated as Wild Burro Territory. Management will protect burro habitat and maintain a thriving ecological balance.

PECOS WILDERNESS

A12 Utilize, as appropriate, the 11/18/83 Pecos Wilderness Trail Management Plan to schedule and prioritize trail maintenance.

B01 Coordinate management of the wilderness between all concerned Santa Fe National Forest and Carson National Forest Ranger Districts. The Pecos District Ranger will be responsible for coordinating at least one meeting per year between these units to facilitate consistent management.

B03 Campfires and overnight camping are prohibited within the posted areas at Pecos Falls, Beatty's Flat, and within the lake basins of all lakes, due to loss of vegetative cover and soil.

Utilize news releases, postings, permit issuance, and individual visitor contacts to inform visitors of areas of concentrated resource damage, and the resulting use restrictions.

Manage the following portions of the wilderness at a standard level of service:

Pecos Ranger District
Rio Nambe drainage on the Espanola Ranger District
El Porvenir drainage on the Las Vegas Ranger District

Standard service level includes patrol of trails, at least two visits per week to high and restricted use areas, minor train maintenance and removal of blow down, visitor contacts at high use trailheads during weekends and peak use periods, and litter pick-up.

Manage all other areas at a less than standard service level. This includes periodic trail patrol, minor trail maintenance, and visitor contact on an opportunity basis.

The Santa Fe Watershed portion of the Wilderness is closed to recreation use (See Management Area O).

MANAGEMEN'T AREA H

WILDLIFE	C01	Allow fish stocking of fingerlings and fry by non-mechanical means of transportation In: Rito del Padre. Rio de I& Chimayosoe. Rito Valdez. RIto Azul. Pecos River, Panchuela Creek. Winsor Creek. Rio Mora. Jack's Creek. all forks of the Santa Barbara. Rio las Trampas. Rio Madera, Rio Capulin. Beaver Creek. Rito la Casa (north and middle forks). Rio Fr1joles, Panchuela West, Rio Medlo, Rio Nambe. Hollinger Canyon, and El Porvenir Creek. The following lakes L streams may be stocked with fingerlings and fry using air drops from helicopter*: Lake Katherine. Spirit Lake. Stewart Lake. Pecos Baldy I:ake. Joe Vigil. Truchas Lakes. San Leonardo Lakes. Las Tramp" . Maestas. Middle Fork. Rio Is Casa. North Fork Rio I& Casa. and Santiago Lake. Allow use of helicopter to remove excess bighorn *beep during time period* approved by Regional Forester. Manage bighorn *beep habitat to maintain an average population of 250 animals In the Pecos. Stocking of native cutthroat trout will be encouraged and coordinated with the Now Mexico Game and Fish Department. Inventory. evaluate, and improve areas of streams, lakes. and wet land* for cold water fisheries, especially the Rio Grande Cutthroat trout. A cooperative stocking plan will be developed every Aree years, to provide for management of fishing opportunities. thereby aiding In management of levels of visitor use. The Nambe Lake Basin will be managed to maintain suitable habitat for the Lillejeborg's pea Clam. Managament,will include the following: - Educate Wilderness users an the Importance of protecting* fragile Wilderness lake basins and water quality. - Do not allow any activity that could cause pollution or chal-es In water chemistry of the lake.
	C04	Maintenance of dam structures by primitive methods may be permitted at: Stewart. Katherine. Pecos baldy. Truchas. Santiago. North Fork Rio I& Casa Lakes. South Fork Rio I& Casa.
RANGE	D04	Vegetation control projects may occur; consistent with wilderness values and the grazing guidelines In Rouse Conferenas Report #96-1126. which accompanied the Central Idaho Wilderness Act of 1'980.

FACILITIES	L25	Permit the New Mexico Game and Fish Department to maintain a cabin at Beatty's Administrative Site. Maintain the following administrative facilities: Beatty's Cabin, toilet, corral, tackroom; Panchuela West Cabin.

SAN PEDRO PARKS WILDERNESS

	B01	Coordinate management between the Cuba and Coyote Ranger Districts. It will be the responsibility of the Cuba Ranger District Ranger to initiate at least one annual meeting to facilitate consistent management.
	B03	Manage recreation in the Nacimiento Trailhead, Cienega Gregorio Lake, and Rio de las Vaca areas at a standard service level. Manage all other areas at a less than standard service level. This will include periodic trail patrol, minor trail maintenance, and visitor contact on an opportunity basis.
WILDLIFE	C01	Allow stocking of catchables in Cienega Gregorio Lake by motorized means.
	C03	Improve native Rio Grande Cutthroat Trout habitat in the Rio Las Vacas above Cienega Gregorio Lake. Inventory and evaluate other streams for Rio Grande Cutthroat Trout habitat suitability.
RANGE	D01	Initiate improved range management to bring stocking in line with capacity and prevent drift between allotments.
FACILITIES	L25	Maintain San Pedro Parks cabin and corral as administrative facilities.

MANAGEMENT AREA I

DESCRIPTION

These areas contain high value cultural resources representing the major cultures which once lived on the Santa Fe National Forest. The types of sites represented include large multi-room pueblos surrounded by high numbers of field houses, pit house villages, lithic scatters, stone quarries which supplied raw materials for the making of tools, etc., a Spanish Colonial hacienda, and historic logging and mining camps. The majority of the Forest's National Register sites occur within this management area. The areas are distributed across the forest, predominantly in the Jemez Mountains. They occur in ecosystems ranging from juniper to ponderosa pine, and contain all slope ranges, although a large percentage are gently sloped.

MANAGEMENT EMPHASIS

Emphasis is on providing active management of the cultural resources including protection, stabilization, interpretation, evaluation, and opportunities for research. Use restrictions will be imposed as necessary to protect the cultural values. There will be no harvest of timber unless necessary to protect or enhance the cultural resources.

Due to lack of a complete inventory, the acreage under this management emphasis will remain flexible. As further inventory locates areas which are characteristic of a particular time period or cultural manifestation not adequately represented or which have a high density of sites, this management area may be modified.

Because of the sensitivity of the location of these areas, and the potential for disruption of the sites due to disclosure of their locations, this management area does not appear on the Plan Management Area Map. It will appear on confidential in-house Forest management maps, archeological records, and be available on a "need to know" basis in accordance with 36 CFR 296.18

Land Suitability	Acres
Total suitable timber	0
Total Management Area	38,957

MANAGEMENT AREA I

STANDARDS AND GUIDELINES — In addition to the forestwide standards and guidelines, the following specific standards and guidelines will apply to this management area:

PROGRAM ELEMENT	ACTIVITY MIH CODE	MANAGEMENT AREA I STANDARDS AND GUIDELINES
CULTURAL RESOURCES	A01	Prepare and Implement plans for op*clflc management activities involving protection. stabilization. Interpretation. evaluation. and opportunities for research.
	A02	Conduct 100% survey of any portion@ of those areas which have not been previously surveyed or for which previous survey It determined to be Inadequate. Boundaries , of individual areas may be adjusted based an new survey Information.
	A03	Conduct evaluation and assessment to obtain more detailed and specific Information on altos within theme areas. Wominate site* to the National Register of 819toric Plac*s'as appropriate.
	A04	Analyze cultural resource data to provide background for future interpretive or scientific use. Consultation will occur with the Indian- Puebla leaders and SEPO as part of the planning of any interpretation, research, or excavation projects. to determine acceptability of the proposal. Protect Important cultural resource sites by emphasizing cultural resources law *nforeemont and site monitoring. WMEP sites will receive antiquities protection signs. and signs offering rewards for Information concerning vandalism to the sites. Existing roada through Important sites will be *valuated. for the possibility of closure or realignment. All altos 119t9d an the NPJW will be evaluated for mineral withdrawal and closed to ORV use. All altos listed on the MW &ad other high priority altos will be monitored every other year with records kept of "ch visit. When recent damage or vandalism Is observed. an Incident report will be filled cut and appropriate law enforcement action taken. If vandalism Is - of a continuing mature. additional protective measures. such &a administrative closure@ of the alto. fencing of the site. Or Installation of remote sensing devices, may be undertaken.
RECREATION	A08	Manage for an ROS setting ranging from R6&dod NatuAl to Semi-Prluittve Non Motorized (SPNM). Motorized travel In allowed only on open road*. Cross country travel Is prohibited, except under the terms of a special us* permit.

MANAGEMENT AREA I

		Where public use is encouraged, some locations within these areas may be identified on Forest Recreation Maps, have interpretive signing, or have a trail system to support the appropriate level of use.
	A13	Manage for VQO's according to the levels indentified in the Forest Visual Resource Inventory. In addition, where public use is encouraged, the Visual Quality Objective will be Retention for the area viewed as Foreground from the site.
RANGE	DO1 D02	Allotment plans typically utilize Level C management to achieve management area objectives.
	D05	Locate range structures to avoid the concentration of livestock on identified cultural resources.
TIMBER	E06	Tree removal for the purpose of reducing damage to cultural resources will be permitted.
		Personal use firewood harvesting may occur if removal does not conflict with the cultural resource objectives for the area. Sites will be identified, marked if appropriate, and use will be directed away from them.
MINERALS	G04	Mineral Leasing Category - Limited Surface Use.
		Extraction of mineral materials will not be permitted.
LANDS	J01	Classification for powerlines: Avoidance. All permitted powerlines must utilize location, design, and construction practices to avoid or mitigate impact on the cultural resources.
FACILITIES	L01 L04 L08 L12 L19	Roads vill not be constructed except where necessary for permitted special uses, mineral activities, private land access, to access adjacent management **areas** where other reasonable access is not available or **to support cultural resource management.** Road management will be implemented with the objective of closing all unnecessary roads where they currently exist.

MANAGEMENT AREA I

PROTECTION	P01-07	Fire suppression will be sensitive to the cultural resources being protected. Resources in need of protection and avoidance areas for suppression facilities, such as firelines, will be identified. Use natural barriers, roads, or other non-ground disturbing methods to suppress wildfires. District Resource Specialist will incorporate archeological and tribal input for fireline locations when fireline construction Is necessary.
	P11-13	Prescribed fire, or other **fuel treatment measures,** are permitted only if their use will maintain or enhance cultural resource values.

MANAGEMENT AREA J

DESCRIPTION

This management area consists of that portion of the Gallinas Creek watershed which is outside of the designated Wilderness boundary, but within the Forest boundary. The northern part of the watershed is located in the Pecos Wilderness which is in Management Area H. The Gallinas Creek watershed provides the majority of the municipal water supply for the city of Las Vegas. Vegetation in this management area ranges from ponderosa pine to spruce-fir , with significant amounts of aspen and mountain grassland. The area contains important fish habitat and is used for developed/dispersed recreation and some grazing.

MANAGEMENT EMPHASIS

Emphasis is on water quality maintenance or enhancement and sustained water yield.

Vegetation management activities will occur where consistent with the primary emphasis.

Land Suitability	Acres
Total suitable timber	5,805
Total Management Area	17,148

STANDARDS AND GUIDELINES

In addition to the forestwide standards and guidelines, the following specific standards and guidelines will apply to this management area:

PROGRAM ELEMENT	ACTIVITY MIH CODE	MANAGEMENT AREA J STANDARDS AND GUIDELINES
RECREATION	A06	There will be no new recreation site development.
	A08	Manage for Recreational Opportunity Settings ranging from Roaded Natural to Semi-Primitive Non-Motorized. Acreage objectives for each are: Roaded Natural 7,790 acres Semi-Primitive Motorized 973 acres Semi-Primitive Non-Motorized 8,385 acres

PAGE INTENTIONALLY LEFT BLANK (WAS A DUPLICATE OF PAGE 139).

		Motorized use is allowed on open roads only. No cross-country travel is allowed, except under the terms of special use permits.
	A13	Manage for VQO's according to the levels identified in the Forest Visual Resource Inventory. The resulting acreage objectives for each VQO are:

Retention:	7,790
Partial Retention:	8,628
Modification:	730

WILDLIFE	C01	Manage wildlife habitat in a manner which contributes to the quality water emphasis of this management area.
	C04	Maintain fish habitat structures in Gallinas and El Porvenir Creeks.
RANGE	D01 D02	Allotment plans typically utilize Levels A, B, or C management to achieve management area objectives.
	D04 D05	Manage grazing to protect water quality.
TIMBER	E00	Timber harvesting activities and slash disposal will be designed to meet VQO standards of Retention of Partial Retention.
	E01	Timber harvest activities will be planned to limit the potential of catastrophic fire, and promote long term forest and watershed health.
	E04	Reforestation activities will be consistent with the overall goal of promoting long term forest and watershed health.
WATERSHED	F02	Cooperate in the implementation of the comprehensive watershed management plan. Maintain or improve high water quality conditions.
	F04	Close or obliterate unneeded travelways.
MINERALS	G04	Mineral leasing category – Limited Surface Use
LANDS	J01	Classification of powerlines in excess of 69Kv: Avoidance. Where it is not environmentally feasible to avoid this management area because of topographic obstacles or unacceptable impacts elsewhere on a proposed corridor alternative, utilities in excess of 69Kv may require extensive mitigation measures to protect water quality if located in the management area.

		All powerlines 69Kv or less must utilize location, design, and construction practices which complement the management area emphasis.
FACILITIES	L01 L02 L08 L12	Roads will generally not be constructed. except for temporary access to implement vegetation management activities (e.g. timber harvest) or to support special use permit needs, private access, or mineral activities. If roads are needed, the City of Las Vegas will be fully involved in the environmental analysis.
	L19	Roads and bridges will be managed to support the objectives of protecting water quality, to serve administrative needs, and to protect public safety, other resource values, and facility investments. Temporary roads will be completely rebabilltated, to prevent future motor vehicle access. The City of Las Vegas will be informed of scheduled maintenance that may temporarily impact water quality.
PROTECTION	P06-P07	The suppression objective is to control 90% of the high intensity (flame length 41) wildfires at 10 acres of lose, and 90% of the low intensity (flame length less than 41) wildfires at 20 acres or less. Suppression tactics that minimize disturbance to the soil and water resources will be used.
	P11-P13	Prescribed fire my be used to reduce fuels to an acceptable level while protecting watershed values.

MANAGEMENT AREA K

DESCRIPTION

This management area occurs primarily in the lower elevational ranges, within juniper and pinyon vegetation types. It contains plant or animal species or soils that are sensitive to intensive management and a small portion of this Forest's firewood and forage base. There is also a small amount of warm water fisheries opportunity.

MANAGEMENT EMPHASIS

The primary emphasis in this area is on protection of sensitive species, ecosystems, and fragile soils. Consistent with this theme, ORV travel will be prohibited, and recreation, grazing, and firewood activities will occur only when compatible with the primary emphasis.

Land Suitability	Acres
Total suitable timber	0
Total Management Area	65,181

STANDARDS AND GUIDELINES

In addition to the forestwide standards and guidelines, the following specific standards and guidelines will apply to this management area:

PROGRAM ELEMENT	ACTIVITY MIH CODE	MANAGEMENT AREA K STANDARDS AND GUIDELINES
RECREATION	A08	Manage for ROS settings of Semi-Primitive Non-Motorized in the Erosion Pasture and Arroyo Frijoles areas, Roaded Natural in the El Pueblo area and Semi-Primitive Motorized along the Rio del Oso in the Erosion Pasture. Total acres of each are: Roaded Natural: 18,846 13,726 Semi-Primitive Motorized: 5,120 Semi-Primitive Non-Motorized: 46,335

MANAGEMENT AREA K

Motorized travel is allowed on open roads only. No cross-country travel is allowed, except under the terms of a special use authorization. Special off-road vehicle recreation events will not be permitted in these areas.

A13 Manage for VQO's according to the levels identified in the Forest Visual Resource Inventory.

The resulting acreage objectives for each VQO are:

Retention:	847
Partial Retention:	5,921
Modification:	7,843
Y1&x1mum Modification:	50,570

WILDLIFE C01 Wildlife management in the Erosion Pasture will feature the following:

Grama grass cactus and the attainment of stable, well distributed populations;

Development of a grama grass cactus recovery action plan;

Riparian management and improvement of the Rio del Oso;

Birds of prey nesting and feeding habitat;

Increased non-game habitat values.

Wildlife management in El Pueblo will feature the following:

Inventory and analysis of pronghorn habitat;

Development of a pronghorn management plan to maintain herd viability;

Coordination with other uses to minimize pronghorn disturbance.

Manage to enhance suitable cover for ground nesting birds and rodents in deficient areas.

Manage for perches distributed throughout the area which meet the needs of songbirds and raptors.

RANGE D01 D02 Allotment plans typically utilize Level C or Level D management to achieve management area objectives.

MANAGEMENT AREA K

TIMBER	E06 E07	Pinyon and juniper harvesting will be done in 1 to 20 acre units, utilizing shelterwood or overstory removal methods. The rotation age will be 300 years. Cutting units will be carefully located to avoid known populations of grama grass cactus.
WATERSHED	F04	Close or obliterate unneeded travelways. Consider areas of watershed resource damages and develop management strategies to improve such areas and reduce additional adverse impacts.
MINERALS	G04	Mineral Leasing Category - Limited Surface Use.
LANDS	J01	Classification for powerlines in excess of 69Kv: Avoidance. Where it is not environmentally feasible to avoid this management area because of topographic obstacles or unacceptable impacts elsewhere on a proposed corridor alternative, utilities in excess of 69Kv located here may require extensive mitigation measures such as minimum disturbance construction methods, extensive revegetation efforts, and sensitive tower placement. All powerlines 69Kv or less must utilize location, design, and construction practices to meet the soils and sensitive species protection emphasis of this area.
FACILITIES	L01 L04 L08 L12 L29	Roads will generally not be constructed in this management area except as necessary to access adjacent management areas, private land. permitted special uses, mineral activities, or to provide for limited recreation or firewood opportunities. As a forestwide average for this management area, road use will be managed with the objective of limiting open road density to 0 to 1.0 miles per square mile. Road management priorities will be based on minimizing resource damage, eliminating unsafe conditions, or closing unneeded roads.
PROTECTION	P01-07	Wildfire suppression strategies will sake maximum use of natural control features while maintaining the sustained long-term yield firewood base and the forage base needed for the remainder of the grazing season. Protection will be provided to T&E plant inclusions from both wildfire and suppression efforts. The suppression objective within firewood areas will be to control 90% of high Intensity (4'+ flame length wildfires) at 100 acres or less.
	P11-13	Prescribed fire emphasis may be used to maintain treated grasslands or accomplish other objectives when consistent with the emphasis of this area.

MANAGEMENT AREA L

DESCRIPTION

These areas offer outstanding opportunities for dispersed recreation which is characterized by a moderate to high probability of experiencing isolation from other users in a predominantly natural appearing environment. They are distributed across the forest and represent ecosystems ranging from juniper to spruce-fir, and contain all slope ranges although a large percentage is rugged and steeply sloped. These areas are primarily unroaded and are closed to motorized recreation use. Some cold water fisheries are present.

MANAGEMENT EMPHASIS

Emphasis is on providing semi-primitive non-motorized recreation opportunities. Wildlife, range, and fuels management may occur where consistent with this emphasis. Timber harvest and road building are not consistent with this emphasis, and none are scheduled within this planning period. These areas will receive priority in dispersed recreation management, trail and trailhead development, and trail maintenance.

Land Suitability	Acres
Total suitable timber	0
Total Management Area	100,683

STANDARDS AND GUIDELINES

In addition to the forestwide standards and guidelines, the following specific standards and guidelines will apply to this management area:

PROGRAM ELEMENT	ACTIVITY MIH CODE	MANAGEMENT AREA L STANDARDS AND GUIDELINES
RECREATION	A01	Manage a Canadian Dogwood plant community as a Special Interest Area. Interpretation will be accomplished in a manner which protects the unique botanical attributes of this area.
	A06	Trailheads utilizing less than 2 acres may be constructed at the edge of these areas if development on adjacent lands or management areas is not possible.
	A08	Manage for an ROS setting of Semi-Primitive Non-Motorized (SPNM). In SPNM settings, there is a moderate to high probability of experiencing isolation from the sights and sounds of humans, and of challenge and risk in a natural setting. Generally, encountering 6 – 15 parties per day on trails is the norm, and is the management objective.

MANAGEMENT AREA L

These areas are closed to motorized travel. Existing use on roads under special use authorization will continue until expiration of the permit or a suitable substitute for access is obtained.

Use of mechanical conveyances, such as mountain bicycles, is permitted.

Prepare Recreation Opportunity Guides to increase public awareness of these areas.

A13 Meet the Visual Quality Objective (VQO) of Retention – management activities should not be evident to the casual forest visitor within one year of project completion.

Emphasize use of native or natural materials such as local rock, logs, and indigenous plant species for structural projects or facilities.

WILDLIFE C01 In White Rock Canyon, wildlife management should emphasis maintenance or enhancement of birds of prey habitat, threatened or endangered species migration corridors, riparian areas, and mule deer habitat.

The riparian zone will be evaluated for enhancement opportunities with specific considerations of possible contribution to threatened or endangered species recovery. Mule deer habitat quality will be maintained or enhanced.

In the East Fork of the Jemez River, wildlife management should emphasize late forest seral stage habitat, threatened or endangered species, and fisheries.

In Corral Canyon, wildlife management should emphasis birds of prey, mule deer, and mountain lion habitat. A field evaluation will be made at least every two years to detect invasion by Barbary sheep and to recommend appropriate action.

MANAGEMENT AREA L

RANGE	D01 D02	Allotment plans typically utilize Levels B, C, or D to achieve management area objectives. The following areas have more specific management levels: Peralta Canyon. Canones. East Fork --- Levels C or D White Rock, Nacimiento --- Level B Guaje, Gabaldon --- Level A
	D07	Develop and implement a management plan for the Caja Wildhorse Territory in White Rock Canyon which protects wildhorse habitat and maintains a thriving ecological balance.
MINERALS	G04	Mineral Leasing Category - Limited Surface Use.
LANDS	J01	Classification for powerlines in excess of 69Kv: Avoidance. Where it is not environmentally feasible to avoid this management area because of topographic obstacles or unacceptable impacts elsewhere on a proposed corridor alternative, utilities in excess of 69Kv may require extensive mitigation measures such as modified structures, color, masking, screen plantings, and line relocation if located in this management area. All powerlines 69Kv or less should utilize location, design, and construction practices, including burial unless infeasible, to meet the VQO of Retention.
FACILITIES	L01 L04 L08 L12 L19	Roads will generally not be constructed except to access private land, special use permits or mineral activities. Some existing roads under special use permit may be retained. Road management will be implemented with the objective of closing roads where they currently exist. Roads constructed will be closed immediately following the activity, scarified and reseeded.
PROTECTION	P01-07	The suppression objective is to control 90% of the high intensity (flame length 4'+) wildfires at 40 acres or less. T. & E. habitat needs will be evaluated in determining size constraints for individual low intensity (less than 4' flame length) wildfires, in the East Fork, Peralta, Chicoma, Guaje, and White Rock areas. For other areas, make maximum use of natural features for control lines for low intensity fires. Consider methods other than tractors for fireline construction.
	P11-13	Prescribed fire may be utilized as appropriate to develop and maintain vegetative diversity for visual quality and dispersed recreation values.

MANAGEMENT AREA L

WILDERNESS RECOMMENDATION		Portions of the Enchanted Lakes and Grace Tracts, totalling 2,138 acres, are recommended for addition to the Pecos Wilderness. These lands will be managed to retain their wilderness qualities under this management area until legally declared wilderness by Congress. At that time, these lands will be managed under the standards & guidelines of Management Area H. As such, the following standards & guidelines modify those above for these lands.
RECREATION	A06	No trailhead construction will occur on these lands.
	A08	Manage for an ROS setting of Primitive. See Management Area H measures used in the management of this ROS class. Mountain bicycles are not permitted.
	A13	The Visual Quality Objective is Preservation.
MINERALS	G04	Mineral Leasing Category - Withdrawn
LANDS	J01	Utility corridors are prohibited except in accord with Section 4 (d) 4 (1) of the Wilderness Act of 1964.
FACILITIES	L01	No roads will be planned or constructed.
PROTECTION	P01-07	The suppression objective is to control high intensity wildfires at 2,000 – 5,000 acres while making maximum use of natural features for control lines and utilizing hand tools. Low intensity fires will have no size limitations, but will be monitored to insure they remain within wilderness resource objectives. Motorized fire line building may occur only with Regional Forester's approval. Other motorized equipment may be used with approval of the Forest Supervisor if it is necessary to meet suppression objectives or to retrieve personnel to meet suppression objectives elsewhere.
	P34	Integrated forest protection activities will be limited to detection, surveillance, and reporting, except where resources outside the areas are threatened. The Regional Forester must approve any suppression plans.

MANAGEMENT AREA M

DESCRIPTION

This area consists of the one existing and two proposed Research Natural Areas (RNA). These areas offer ecosystem representation appropriate to meet needs identified by the Southwestern Region. The existing Monument Canyon RNA is a 640 acre section consisting primarily of Ponderosa Pine. The Canada Bonito RNA is 300 acres of Thurber Fescue, while the Ladrones Mesa RNA is 500 acres of Juniper savannah.

MANAGEMENT EMPHASIS

These areas will be managed to provide opportunities for non-disruptive research and education. This management includes allowing natural processes to occur and the protection of natural features. Use restrictions will be imposed as necessary to keep areas in their natural or unmodified condition. There will be no harvest of timber or firewood, nor will this area be assigned any grazing capacity.

The following areas will be proposed for designation to the Natural Research System:

Approximately 300 acres (Canada Bonito) for the protection and study of a high elevation Thurber fescue meadow.

Approximately 500 acres (Ladrones Mesa) for the protection and study of a juniper savannah.

Location and evaluation of other potential areas which lack Regional representation will continue throughout this planning period.

Land Suitability	Acres
Total suitable timber	0
Total Management Area	1,440

STANDARDS AND GUIDELINES

In addition to the forestwide standards and guidelines, the following specific standards and guidelines will apply to this management area:

PROGRAM ELEMENT	ACTIVITY MIH CODE	MANAGEMENT AREA M STANDARDS AND GUIDELINES
RECREATION	A08	Allow non-motorized dispersed recreation activities provided they do not modify the area or threatened or impair the research or educational value of the area.

MANAGEMENT AREA M

		Require recreation users to pack out all their trash.
		Cross-country vehicular travel Is prohibited within study areas.
		No open campfires will be permitted within the study areas.
	A11	No new trail construction will occur.
	A13	Manage for a Visual Ouality Objective of Preservation
WILDLIFE	C01	Evaluate these areas and determine their contribution to threatened and endangered species recovery objectives.
	C02	Prohibit Introduction of Non-native plant or animal species.
RANGE	D01 D02	Allotment plate utilize Level A to achieve management area objectives.
		Post boundaries, fence, or take other necessary action to prevent unauthorized livestock grazing.
TIMBER	E00	Prohibit all timber and firewood activities.
MINERALS	G04	Mineral leasing category: Limited surface use- No surface occupancy
LANDS	J01	Utility corridors are excluded
FACILITIES	L01 L04 L08 L12	Roads will not be constructed in this management area. Road management and closures will be implemented with the objective of closing roads where they currently exist, except as necessary to provide access for research, or adjacent management areas.
PROTECTION	P01-07	The fire suppression objective for Monument Canyon is to control 9O% of the high intensity wildfires at 75 acres or less. Maximum loss from high intensity wildfires is 75 acres of the management area per decade.
		Low intensity wildfires will have no size limitations.
		Limit suppression action to the use of hand tools.
	P11 P12 P13	Fuel treatment will be commensurate with management objectives and direction for individual RNA's.
		Allow prescribed fire, using planned and unplanned ignitions in Ladrones Mesa and Canada Bonito RNA's to maintain these fire dependent ecosystems.

MANAGEMENT AREA N

DESCRIPTION

These areas of land contain essential habitat for threatened and endangered species. They occur throughout the Forest in a variety of habitat types. For the most part, these are small areas of land isolated from high development areas and are predominantly still in a natural condition.

MANAGEMENT EMPHASIS

The emphasis here will be on management that protects and enhances essential wildlife habitat. This land area will not be included in the suitable timber base. However, certain timber management activities as well as grazing, firewood, and fire management may occur when consistent with the protection emphasis of this area.

Land Suitability	Acres
Total suitable timber	0
Total Management Area	19,275

STANDARDS AND GUIDELINES

In addition to the forestwide standards and guidelines, the following specific standards and guidelines will apply to this management area:

PROGRAM ELEMENT	ACTIVITY MIH CODE	MANAGEMENT AREA N STANDARDS AND GUIDELINES
RECREATION	A08	Manage for ROS settings ranging from Roaded Natural to Semi-Primitive Non-Motorized, as follows: Roaded Natural: Ice Caves Paso del Norte Total acres: 3,861 Semi-Primitive Motorized: Horn Mesa Rio Cebolla Total acres: 7,628

MANAGEMENT AREA N

Semi-Primitive Non-Motorized: Guadalupe Mesa
Las Barrancas
Pajarito

Total acres: 7,786

Motorized use is allowed on open roads only. No cross-country travel is allowed, except under the terms of a special use authorization.

A13 Manage for VQO's according to the levels identified in the Forest Visual Resource Inventory. The resulting acreage objectives for each VQO are:

Retention:	5,249
Partial Retention:	6,715
Modification:	4,603
Maximum Modification:	2,708

WILDLIFE C01 Wildlife management in these areas will feature the following:

Inventory and evaluate the habitat to develop action plans which maximize the area's contribution to Jemez Mountains Salamander recovery efforts.

Inventory and evaluate the habitat to develop eyrie management plans for birds of prey.

Vegetation managemant will favor old growth forest conditions and vertical diversity for non-game after T&E species habitat needs are met.

RANGE D01 D02 Allotment plans typically utilize Level B or C management to achieve management area objectives.

TIMBER E00 Timber management may be used in those areas only to accomplish threatened and endangered habitat improvement objectives.

Permitted firewood collection will be conducted in a manner consistent with Jemez Mountain Salamander objectives.

All vegetation management must be executed in a manner and time of year which is consistent with threatened or endangered species needs.

MINERALS G04 Mineral Leasing Category - Limited Surface Use.

MANAGEMENT AREA N

LANDS	J01	Classification for powerlines in excess of 69Kv: Avoidance. Where it is not environmentally feasible to avoid this management area because of topographic obstacles or unacceptable impacts elsewhere on a proposed corridor alternative, utilities in excess of 69Kv may require: extensive mitigation measures such as minimum disturbance construction methods, seasonal restrictions, and sensitive tower placement when located in this management area. All powerlines 69Kv or less must utilize location, design, and construction practices to meet T&E habitat requirements and the appropriate Visual Ouality Objective.
FACILITIES	L01 L04 L08 L12 L19	Roads will not be constructed except where necessary for special use permits, mineral activities, and adjacent management areas where other reasonable access is not available or to support wildlife habitat improvement projects. Road management will be implemented with the objective of closing all unnecessary roads where they currently exist.
PROTECTION	P01-07	Wildfire suppression strategies will make maximum use of natural control features while protecting key wildlife habitat. The suppression objective will be to control 90% of both high and low intensity wildfires at 10 acres or less. Air traffic will be coordinated to minimize impacts on T&E species.
	P11 P12 P13	Wildlife biologist input will be solicited in all fuel treatment planning and execution. Prescribed fire and fuelbreak design will be used to minimize the effects of wildfire on T&E or sensitive species habitat.

MANAGEMENT AREA O

DESCRIPTION

This area consists of the 15,000 acres closed to all use by the Secretary of Agriculture in November of 1932 for the protection of the Santa Fe River watershed. Of this amount, 6,720 acres are within the Pecos Wilderness. It is mostly steep land with vegetation ranging from pinyon-juniper to spruce-fir. The area encompasses private land inclusions which contain three reservoirs owned and operated by the public utility company.

MANAGEMENT EMPHASIS

Management emphasis is on quality water production. This area will remain closed to all entry according to the original closure order.

A thorough analysis and public involvement process may be conducted during the first decade to evaluate other management opportunities that do no violate the original intent of the closure. The issues to be considered will be identified in the initial scoping process of the study. Some issues raised so far include water quality, water and land values, recreation opportunities, recreation conflicts, access requirements, and fire hazards. Until completion of this study, the following standards and guidelines will be applicable to this area. In addition, these standards and guidelines will apply to that portion of the Santa Fe Watershed within the Pecos Wilderness.

Land Suitability	Acres
Total suitable timber	0
Total Management Area	15,000

STANDARDS AND GUIDELINES

In addition to the forestwide standards and guidelines, the following specific standards and guidelines will apply to this management area:

PROGRAM ELEMENT	ACTIVITY MIH CODE	MANAGEMENT AREA O STANDARDS AND GUIDELINES
RECREATION	A08	Closed to all recreational and other public use.
	A13	Manage for a Visual Quality Objective (VQO) of preservation.
WILDLIFE	C01	Wildlife management will allow research and studies consistent with the relatively undisturbed habitat and botanical values of the area.
RANGE	D01 D02	No grazing capacity has been assigned.

MANAGEMENT AREA O

MINERALS	G04	Limited surface use
LANDS	J01	Utility corridors will be excluded.
		Continue to allow low impact cooperative research agreements with State and private institutions on a case-by-case basis.
FACILITIES	L01 L04 L08 L12 L19	Roads will not be constructed in this management area except as necessary to control wildfire which threatens life, property, or water quality. Any constructed roads will be closed or obliterated after use. The existing roads in the area will be managed and maintained under permit by operator of the municipal water system.
PROTECTION	P01-P07	The suppression objective is to control 90% of the high intensity (flame length 4'+) wildfires at 10 acres or less, and 90% of the low intensity (flame length less than 4') wildfires at 20 acres or less.
		Use fireline construction methods which have the least impact on water quality values.
	P11-13	Prescribed fire may be used to reduce fuels to an acceptable level while protecting watershed values.

MANAGEMENT AREA P

DESCRIPTION

This management area contains a rich resource of prehistoric and historic cultural resource. It consists of Ponderosa Pine, Mixed Conifer and Aspen analysis area, representing about 5% of the Forest's suitable timber. This areas also provides primary wildlife habitat for deer, elk, turkey and other species. This management area occurs only in the Jemez Mountain portion of the Forest.

MANAGEMENT EMPHASIS

Cultural resource location, inventory, nomination, and protection are emphasized here. Emphasis is also on timber production and enhancement of wildlife habitat diversity consistent with other resource integration. Grazing capacity is generally transitory in nature but there are allotments in intermingled grasslands. Roaded dispersed recreation experiences are emphasized. Firewood is provided as a by-product of timber harvest activities.

Land Suitability	Acres
Total suitable timber	17,871
Total Management Area	30,557

MANAGEMENT AREA P

STANDARDS AND GUIDELINES — In addition to the forestwide standards and guidelines, the following specific standards and guidelines will apply to this management area:

PROGRAM ELEMENT	ACTIVITY MIH CODE	MANAGEMENT AREA O STANDARDS AND GUIDELINES
RECREATION	A03	Evaluate and nominate, as appropriate, known sites in this area which are not currently listed In the NRHP.
	A04	Interpretation and development to enhance recreational enjoyment may occur for National Register of Historic Places (NRHP) and other important sites. Interpretation may include signing, self-guided trails, or brochures and publications at or away from the sites. Associations with other federal and state agencies interested professional or citizen groups and consultation with Indian pueblos will be pursued to carry out interpretation and development projects for these sites. Protect important cultural resource sites by emphasizing cultural resources law enforcement and site monitoring, NRHP sites will receive antiquities protection signs, and signs offering rewards for information concerning vandalism to the sites. Existing roads through important sites will be evaluated for the possibility of closing or realignment. All sites listed on the NRHP will be evaluated for mineral withdrawal and closed to ORV use. All sites listed on the NRHP and other high priority sites will be monitored every other year with records kept of each visit. When recent damage or vandalism is observed, an incident report will be filled out and appropriate law enforcement action taken. If vandalism is of a continuing nature, additional protective measures, such as administrative closures of the site, fencing of the site, or installation of remote sensing devices, may be undertaken. A program to stabilize or repair damaged important cultural resource sites will be established by April of 1988. Priorities for repair will depend upon both the severity of damage and the relative importance of the stie. Stabilization will center on the late prehistoric/early historic Indian ruins which contain fragile standing architectural features.
	A08	These lands are generally open to ORV travel except for the restrictions and closures displayed on the ORV map.

MANAGEMENT AREA P

Manage for ROS settings of Roaded Natural and Semi-Primitive Motorized. The difference will be based on road development standards, maintenance levels, and open road densities. Acreage objectives for each are:

Roaded Natural: 12,223
Semi-Primitive Motorized: 18,334

A13 Manage for VQO's according to the levels identified in the Forest Visual Resource Inventory. The foregrounds of the following will be managed to a VQO of Retention (see Management Area “C").

Forest Road #10
Forest Road #271

The resulting acreage objectives for each VQO are:

Retention:	1,355
Partial Retention:	5,243
Modification:	12,723
Maximum Modification:	11,236

WILDLIFE C01 Wildlife emphasis is on providing even distribution of age classes in forested communities. Stands providing forage and cover will be spatially designed to enhance wildlife values.

Entries should be scheduled to avoid peak elk use periods and to minimize duration of road building and logging activity.

RANGE D01 D02 Allotment plans typically utilize Levels B or C management to achieve management area objectives.

TIMBER E00 Timber emphasis will be to treat stands to provide a uniform age class distribution, including old growth and uneven-age. Priority of treatment will be:

1. Sanitation and salvage
2. Management of insects and diseases
3. Regeneration of mature and overmature stands with high site index values

E05 Timber stand improvement projects will be designed to avoid or properly mitigate disturbance to any known archeological or Indian religious sites.

MANAGEMENT AREA P

	E06 E07	Timber sales will be prepared and harvested to either avoid or properly mitigate any disturbance to archeological or Indian religious sites within the project area, and in compliance with the settlement of the Save the Jemez et al./ State of New Mexico vs. Forest Service litigation.
MINERALS	G04	Mineral Leasing Category - Standard.
LANDS	J01	This management area is unclassified for utility corridors.
FACILITIES	L01 L04 L08 L12 L19	Roads generally will be constructed, reconstructed, maintained, or closed to support the cultural resource, timber, and wildlife emphasis of this management area. Road use will be managed with the objective of limiting open road density to 1.0 to 2.5 miles per square mile.
PROTECTION	P01-P07	The suppression objective is to control 90% of the high intensity (4 foot or greater flame length) wildfires at 75 acres or less. Maximum loss from high intensity fires is 155 acres in the management area per decade. The suppression objective for low intensity (less than 4 foot flame length) wildfires is to protect plantations less than 40 years old. Assign an archeologist or para-archoologist with any tractor used for line construction.
	P11 P12 P13	Fuel treatment methods which are commensurate with protection of the cultural resources, timber base and maintenance of wildlife habitat are acceptable. Prescribed fire will be used primarily for site preparation, fuels reduction and enhancement of wildlife habitat. Fire retardant or other methods which are not surface disturbing will be considered for prescribed fireline construction.

MANAGEMENT AREA Q

DESCRIPTION

This management area consists of those Forest lands which provide a broad range of recreation opportunities and visual quality and contain a rich resource of historic and prehistoric habitation sites. These lands provide scenic backdrops from highways or communities and contain important dispersed recreation areas. It is mainly comprised of Pinyon-Juniper, Ponderosa Pine, and Mixed Conifer analysis areas and contains about 2% of the Forest's suitable timber. This management area occurs only in the Jemez Mountain portion of the Forest.

MANAGEMENT EMPHASIS

Cultural resource site location, inventory, nomination, and protection in these areas are emphasized. Emphasis is also on providing dispersed recreation opportunities, while maintaining visual quality, timber and firewood production. Grazing activities vary in intensity over this area. Emphasis is on maintenance or enhancement of wildlife habitat diversity. Cultural resource site location, inventory, nomination, and protection in these areas is emphasized.

Land Suitability	Acres
Total suitable timber	5,043
Total Management Area	18,439

STANDARDS AND GUIDELINES

In addition to the forestwide standards and guidelines, the following specific standards and guidelines will apply to this management area:

PROGRAM ELEMENT	ACTIVITY MIH CODE	MANAGEMENT AREA Q STANDARDS AND GUIDELINES
RECREATION	A03	Evaluate and nominate, as appropriate, known sites in this area which are not currently listed in the NRHP.
	A04	Interpretation and development to enhance recreational enjoyment may occur for National Register of Historic Places (NRHP) and other important sites. Interpretation may include signing, self-guided trails, or brochures and publications at or away from the sites. Associations with other federal and state agencies, interested professional or citizen groups, and consultation with Indian pueblos will be pursued to carry out interpretation and development projects for these sites. Protect important cultural resource sites by emphasizing cultural resources law enforcement and site monitoring, NRHP sites will receive antiquities protection signs, and signs offering rewards for information concerning vandalism to the sites. Existing roads through important sites will be evaluated for the possibility of closing or realignment. All sites listed on the NRHP will be evaluated for mineral withdrawal and closed to ORV use. All sites listed on the NRHP and other high priority sites will be monitored every other year, with records kept each visit. When recent damage or vandalism is observed, an incident report will be filled out and appropriate law enforcement action taken. If vandalism is of a continuing nature, additional protective measures, such as administrative closures of the site, fencing of the site, or installation of remote sensing devices, may be undertaken. A program to stabilize or repair damaged important cultural resource sites will be established by April of 1988. Priorities for repair will depend upon both the severity of damage and the relative importance of the site. Stabilization will center on the late prehistoric/early historic Indian ruins which contain fragile standing architectural features.

MANAGEMENT AREA O

A08 These lands are generally open to ORV travel except for the restrictions and closures indicated on the ORV map.

Manage for ROS settings of Roaded Natural and Semi-Primitive Motorized.

A13 Manage all activities to meet a Visual Quality Objective (VQO) of Partial Retention for the general area. In addition to those sites and trails noted above, the seen areas of the following will be managed to a VQO of Retention (see Management Area "C").

Cerro Pedernal area

The resulting acreage objectives for each VQO are:

Retention	2,800
Partial Retention	14,307

A13 E07 A maximum of 20% of the Partial Retention (PR) Foregrounds and Middleground areas will be regenerated in this planning period.

At least 5% of the Partial Retention Foregrounds of trails and roads will receive Vegetation Management Prescription II to promote old growth components.

Maximum opening size in these areas will be based in VAC, as follows:

Visual Absorption Capability:	Low	Medium	High
Critical Viewing Distance:	Fg/Mg/Bg	Fg/Mg/Bg	Fg/mg/Bg
Maximum Opening Site:	1/5/10	10/15/25	15/25/40

WILDLIFE C01 Wildlife management is to emphasize game and non-game habitat in a manner which contributes to the recreation experience.

RANGE D01 D02 Allotment plans typically utillze Levels B or C management to achieve management area objectives.

TIMBER E00 Timber emphasis will be to treat stands to provide a uniform age class Distribution, including old growth and unevenage. Priority for treatment will be:

1. Sanitation and salvage
2. Insect and disease management
3. Regeneration of mature, and overmature stands with high site index values.

MANAGEMENT AREA O

	E05	Timber stand improvement projects will be designed to avoid or properly mitigate disturbance to archeological or Indian religious sites. TSI projects will provide for a variety of tree sizes and densities in project areas which will create or maintain visual variety as well as improving growing conditions.
	E06 E07	Timber sales will be prepared and harvested to either avoid or properly mitigate any disturbance to archeological or Indian religious sites within the project area, and in compliance with the settlement of the Save the Jemez et aI./ State of New Mexico vs. the Forest Service litigation. Sales will be prepared and harvested to maintain or enhance visual variety and achieve VQO standards for partial retention.
MINERALS	G04	Mineral Leasing Category - Standard.
LANDS	J01	This management area is unclassified for utility corridors.
FACILITIES	L01 L04 L08 L12 L19	Roads will be constructed, reconstructed, maintained or closed to support cultural resource activities, a variety of dispersed recreation opportunities, and timber activities. Road use will be managed with the objective of limiting open road density to 1.0 to 2.5 miles per square mile.
PROTECTION	P01-P07	The suppression objective is to control 90% of the high intensity (4 foot or greater flame length) wildfires at 15 acres or less in the foreground, and low intensity (flame length less than 4') wildfires at 75 acres or less. Assign an archeologist or para-archeologist with any tractor used for fire line construction.
	P11 P12	Prescribed fire will be used to maintain or develop vegetative diversity for visual and wildlife benefits, fuels reduction, and site preparation an long as cultural resources can be protected. Fire retardant, or other methods which are not surface disturbing, will be considered for Prescribed fireline construction.

MANAGEMENT AREA R

MANAGEMENT AREA R

DESCRIPTION

This management area contains a rich resource of historic and prehistoric sites. It also contains Forest lands that provide essential habitat for threatened and endangered species, key deer and elk winter range, or other areas important to wildlife. It consists of the Ponderosa Pine, Mixed Conifer, and Sagebrush analysis areas. This management area occurs only in the Jemez Mountain portion of the Forest and represents about 20% of the Forest's suitable timber.

MANAGEMENT EMPHASIS

Cultural resource location, inventory, nomination, and protection are emphasized. The emphasis is also on wildlife habitat improvement and essential habitat protection and enhancement. Grazing and timber harvest activities occur where compatible with the primary emphasis of this area. Recreation is mostly of a dispersed roaded nature. Firewood is provided as a by-product of timber harvest.

Land Suitability	Acres
Total suitable timber	62,581
Total Management Area	144,984

STANDARDS AND GUIDELINES

In addition to the forestwide standards and guidelines, the following specific standards and guidelines will apply to this management area:

PROGRAM ELEMENT	ACTIVITY MIH CODE	MANAGEMENT AREA R STANDARDS AND GUIDELINES
RECREATION	A03	Evaluate and nominate, as appropriate, known sites in this area which are not currently listed in the NRHP.
	A04	Interpretation and development to enhance recreational enjoyment may occur for National Register of Historic Places (NRHP) and other important sites. Interpretation may include signing, self-guided trails, or brochures and publications at or away from the sites. Associations with other federal and state agencies interested professional or citizen groups and consultation with Indian pueblos will be pursued to carry out interpretation and development projects for these sites. Protect important cultural resource sites by emphasizing cultural resources law enforcement and site monitoring, NRHP sites will receive antiquities protection signs, and signs offering rewards for information concerning vandalism to the sites. Existing roads through important sites will be evaluated for the possibility of closing or realignment. All sites listed on the NRHP will be evaluated for mineral withdrawal and closed to ORV use. All sites listed on the NRHP and other high priority sites will be monitored every other year, with records kept of each visit. When recent damage or vandalism is observed, an incident report will be filled out and appropriate law enforcement action taken. If vandalism is of a continuing nature, additional protective measures, such as administrative closures of the site, fencing of the site, or installation of remote sensing devices, may be undertaken. A program to stabilize or repair damaged important cultural resource sites will be established by April of 1988. Priorities for repairs will depend upon both the severity of damage and the relative importance of the site. Stabilization will center on the late prehistoric/early historic Indian ruins which contain fragile standing architectural features. These lands are generally open to ORV travel except for the restrictions and closures displayed on the ORV map. Additional closures or restrictions will be implemented as necessary to protect winter range habitat effectiveness.

MANAGEMENT AREA R

Manage for ROS settings of Roaded Natural and Semi-Primitive Motorized. The difference will be based on road development standards, maintenance levels, and open road densities. Acreage objectives for each are:

Roaded Natural:	59,084
Seml-Primitive Motorized:	86,937

A13 Manage for VQO's according to the levels identified in the Forest Visual Resource Inventory. In addition to those sites noted above, the foregrounds of the following will be managed to a VQO of Retention (see Management Area "C").

Road #10
NM Highway #112

The resulting acreage objectives for each VQO are:

Retention:	11,986
Partial Retention:	24,374
Modification:	43,380
Maximum Modification:	66,281

WILDLIFE C01 Wildlife management will emphasize threatened or endangered species habitat enhancement, access management, riparian enhancement and even distribution of seral habitats.

The same emphasis is mule deer, wild turkey, tassel eared squirrel and mountain lion.

The north Cuba District portion of this management area will have a field evaluation conducted at least every two years in selected areas to detect invasion of Barbary sheep.

RANGE D01 D02 Allotment plans typically utilize Levels B or C management to achieve management area objectives.

D03 The location of the sage brush control maintenance areas will be determined by the following criteria:

1. Site has a soil revegetation potential of moderate or high.
2. Slopes are generally less than 15 percent.
3. Soils have a low or moderate erosion hazard rating.
4. Treatment methods will be cost-efficient.

5. Retreated areas will be consistent with visual, wildlife, and cultural resource objectives.

TIMBER	E05	Timber stand improvement projects will be designed to avoid disturbance to archeological sites.
	E06 E07	All timber management activities will be planned and implemented to avoid or properly mitigate any disturbance to any known archeological sites.
	E06	The design of cutting units will enhance their value for providing effective edge for wildlife by utilizing appropriate length, width, and configuration. Manage 75% of the forested acreage to have a minimum of 220 snags per 100 acres. Design harvest plans to provide thermal and hiding cover in proximity to forage. Firewood should be managed to retain snags and on-the-ground large diameter logs. Manage oak communities for early seral stages (wildlife values) and late seral stages (non-game wildlife values).
WATERSHED AIR	F03	Seeding mixtures will contain a high percentage of browse species, forbs, and grasses palatable to wildlife.
MINERALS	G04	Mineral Leasing Category - Standard.
LANDS	J01	This management area is unclassified for utility corridors.
FACILITIES	L01 L04 L08 L12 L19	Roads will be constructed, reconstructed, maintained, or closed to enhance wildlife habitat effectiveness and support-timber harvest and cultural resource activities. Road use will be managed with the objective of limiting open road density to 0.3 to 1.5 miles per square mile.
PROTECTION	P01-P07	The suppression objective is to control 90% of the high intensity (4 foot or greater flame length) wildfires at 75 acres or less. Maximum loss from high intensity fires is 730 acres in this management area per decade.

MANAGEMENT AREA R

The suppression objective for low intensity (less than 4 foot flame length) wildfires is to protect plantations of less than 40 years of age. For low intensity wildfires outside of such plantations, wildlife biologist input will be obtained in determining size constraints.

Air traffic will be coordinated to minimize impacts on T&E species.

Assign an archeologist or para-archeologist with any tractor used for line construction.

P11 P12 Prescribed fire will be used primarily for fuels reduction and wildlife habitat enhancement as long as cultural resources can be protected.

Fire retardant, or other methods which are not surface disturbing, will be considered for prescribed fireline construction.

MANAGEMENT AREA S

DESCRIPTION

This management area is rich in historic and pre-historic sites and contains key wildlife habitat for some woodland and shrub dependant species. They are primarily the low elevation grasslands, pinyon-juniper, oak, and lower Ponderosa Pine areas with flat to steep terrain and provide a great deal of the Forest's forage and firewood. This management area occurs only in the Jemez Mountain portion of the Forest.

MANAGEMENT EMPHASIS

Cultural resource site location, inventory nomination, and protection are emphasized in these areas. Emphasis in this area is also on key wildlife habitat protection, habitat improvement, and forage and firewood production. Recreational opportunities are dispersed and consist primarily of firewood and Christmas tree gathering.

Land Suitability	Acres
Total suitable timber	0
Total Management Area	40,528

STANDARDS AND GUIDELINES

In addition to the forestwide standards and guidelines, the following specific standards and guidelines will apply to this management area:

PROGRAM ELEMENT	ACTIVITY MIH CODE	MANAGEMENT AREA S STANDARDS AND GUIDELINES
RECREATION	A03	Evaluate and nominate, as appropriate, known sites in this area which are not currently listed in the NRHP.
	A04	Interpretation and development to enhance recreational enjoyment may occur for National Register of Historic Places (NRHP) and other important sites. Interpretation may include signing, self-guided trails, or brochures and publications at or away from the sites.

Associations with other federal and state agencies interested professional or citizen groups and consultation with Indian pueblos will be pursued to carry out interpretation and development projects for these sites.

Protect important cultural resource sites by emphasizing cultural resources law enforcement and site monitoring, NRHP sites will receive antiquities protection signs, and signs offering rewards for information concerning vandalism to the sites. Existing roads through important sites will be examined for the possibility of closing or realignment. All sites listed on the NRHP will be evaluated for mineral withdrawal and closed to ORV use.

All sites listed an the NRHP and other high priority sites will be monitored every other year with records kept of each visit. When recent damage or vandalism is observed, an incident report will be filled out and appropriate law enforcement action taken. If vandalism is of a continuing nature, additional protective measures such as administrative closures of the site, fencing of the site, or installation of remote sensing devices, may be undertaken.

A program to stabilize or repair damaged important cultural resource sites will be establlshed by April of 1988. Priorities for repair will depend upon both the severity of damage and the relative importance of the site. Stabilization will center on the late prehistoric/early historic Indian ruins which contain fragile standing architectural features.

A08 These lands are generally open to ORV travel except for the restrictions and closures displayed on the ORV map.

Manage for ROS settings of Roaded Natural and Semi-Primitive Motorized. Acreage objectives for each are:

Roaded Natural: 20,264
Semi-Prindtive Motorized: 20,264

A13 Manage for VQO's according to the levels identified in the Forest Visual Resource Inventory. In addition, foreground of the following will be managed to a VQO of Retention (see Management Area “C").

Forest Road #10

The resulting acreage objectives for each VQO are:

Retention:	1,605
Partial Retention:	7,280
Modification:	6,368
Maximum Modification:	25,275

MANAGEMENT AREA S

WILDLIFE	C01	Evaluate these lands and identify opportunities to contribute to threatened and endangered species recovery objectives. Manage woodland stands in treated grasslands to perpetuate their diversity contribution to non-game species habitat. Grazing management should maintain or enhance woody shrubs and half shrubs such as winter fat and bitterbrush for wildlife forage or cover. Manage for perches distributed throughout the area, to meet songbird and raptor needs. Improve elk and turkey winter ranges through the harvest of pinyon and juniper and sagebrush re-treatment. Manage roads to minimize disturbance in big game winter range.
RANGE	D01 D02	Allotment plans typically utilize Levels C or D management to achieve management area objectives.
	D03	The location of the sagebrush control re-treatment and maintenance areas will be determined by the following criteria: 1. Site has a soil re-vegetation potential of moderate or high. 2. Slopes are generally less than 15 percent. 3. Soils have a low or moderate erosion hazard rating. 4. Treatment methods will be cost-efficient. 5. Retreated areas will be consistent with visual and wildlife objectives.
TIMBER	E06 E07	Pinyon and juniper firewood harvesting will be done in 1-20 acre stands. The rotation age will be 300 years.
WATERSHED & AIR	F03	Allotments in this management area will receive priority for watershed condition improvement after a satisfactory allotment plan is approved.
	F04	Use available activity generated funds in firewood areas to close or obliterate unneeded travelways.
MINERALS	G04	Mineral Leasing Category – Standard.
LANDS	J01	This management area is unclassified for utility corridors.

MANAGEMENT AREA S

FACILITIES	L01 L04 L08 L12 L19	Roads will be constructed, reconstructed, maintained, or closed to support the management emphasis of this area. Road use will be managed with the objective of limiting open road density to 0.3 to 1.5 miles per square mile.
PROTECTION	P01-P07	Wildfire suppression strategies will make maximum use of natural control features while maintaining the sustained long-term yield firewood base and the forage base needed for the remainder of the grazing season. Protection will be provided to cultural resource sites from both wildfire and suppression efforts. The suppression objective within firewood areas will be to control 90% of high intensity (4 foot or greater flame lengths) wildfires at 100 acres or less. Assign an archeologist or para-archeologist with any tractor used for line construction.
	P11 P12 P13	Prescribed fire may be used to maintain treated grasslands, and enhance firewood production or wildlife habitat as long as cultural resources can be protected. Fire retardant, or other methods which are not surface disturbing, will be considered for prescribed fireline construction.

Page 174 is blank.

Monitoring Plan

INTRODUCTION

The purpose of monitoring and evaluating the implementation of the Forest Plan is to inform the decision-maker of the progress toward achieving the goals, objectives, and standards and guidelines.

Monitoring will determine if:

- The management prescriptions are applied as directed;
- Standards are being followed;
- The forest is achieving the goals and objectives of the Forest Plan;
- The application of management prescriptions is responding to public issues and management concerns;
- The effects of implementing the Forest Plan are occurring as predicted;
- The costs of implementing the Forest Plan are as predicted and are acceptable, and;
- Management practices on adjacent or intermingled non-Forest lands are affecting the Forest Plan goals and objectives.

A detailed annual monitoring action plan will be prepared. This annual monitoring action plan will include the details on the amount and location of monitoring to be accomplished. Many of the items to be monitored are already being tracked through the Management Attainment Report (M.A.R.) system. In addition, many items not shown in the monitoring plan are recorded and reviewed annually through the M.A.R. system as another tool for tracking land management accomplishments. The items listed in the monitoring plan reflect the highly important issues, concerns, or opportunities as expressed by the public or land managers. Specific applications, intensity of sampling, person-days required, and costs will be identified in the annual monitoring action plan.

Evaluation of the results of the site-specific annual monitoring action plan will be documented in the annual evaluation report. The significance of the results of the monitoring action plan will be analyzed and evaluated by the Forest interdisciplinary team. Based on the evaluation, any need for further action is recommended to the Forest Supervisor. The recommendations can include:

- No action needed, monitoring indicates goals, objectives, and standards are being reasonably achieved;
- Refer recommended action to the appropriate line officers for improvement of application of management prescription as a Forest Plan amendment;
- Modify the assignment of a prescription as a

Forest Plan amendment;
- Revise the porjected schedule of outputs, and;
- Initiate revision of the Foest Plan.

The documented file of the Forest Supervisor's decisions resulting from monitoring and evaluation is maintained fro future use in amending or revising the Forest Plan. An annual evaluation report of these decisions will be prepared and sent to the Regional Forester for his consideration. This annual report will be available at the Forest Supervisor's Office.

The Forest Plan's monitoring requirements follow. For each action, effect, or resource to be monitored the data source and intent is specified. Frequency for measuring and reporting the monitored item is established, and variability which would initiate evaluation is specified. Expected precision and reliability of the measurement is stated. (Precision is the exactness or accuracy with which the data will be collected; reliability is the degree to which the monitoring accurately reflects the total Forest situation).

MONITORING REQUIREMENTS

Actions, Effect or Resource	Units	Data Source	Intent	Frequency	Precision/ Reliability	Variability which Initiates Evaluation
RECREATION 1						
Dispersed Recreation Use by ROS Class	Recreation Visitor Days	RIM Report: Field inspections	Compare actual and planned outputs.	Annually	+40% / 80%	When actual use exceeds planned use by 30% after 3 years.
RECREATION 2						
Developed Recreation Use for Public Sector and Ski Area	Recreation Visitor Days	RIM Report: Use Report.	Compare actual and planned outputs.	Annually	+10% / 90%	When actual use exceeds Practical Maximum Capacity by 30% or more.
RECREATION 3						
User Satisfaction	N/A	Interviews; Surveys; Correspondence	Assure that recreation experience is satisfactory.	Annually	+50% / 50%	When >25% of respondents indicate lack of satisfaction with facilities or controls.
RECREATION 4						
Facility Condition	Sites	RIM Report; Activity Reviews.	Assure that sites are not hazardous to public health or safety.	Annually	+10% / 90%	When sites fall below RIM Facility Condition 2.
RECREATION 5						
Trail Construction / Reconstruction	Miles	MAR: Contract Administration	Compare actual and planned outputs	Annually	+20% / 80%	When actual changes vary from that expected by +20% after 3 years.

Actions, Effect or Resource	Units	Data Source	Intent	Frequency	Precision/ Reliability	Variability which Initiates Evaluation
VISUAL QUALITY 1						
Effects of Activities on Visual Quality	Acres by VQO met	VMS System; Activity Reviews.	Assure that Forest retains a natural character in commonly seen areas.	Annually	+10% / 90%	When activities in Retention or Partial Retention areas fail to meet objectives on 10% of lands after 5 years.
CULTURAL RESOURCES 1						
Inventories	Acres	Field review	Compare actual and planned outputs	Annually	+20% / 80%	When planned inventories vary by +20% after 5 years.
CULTURAL RESOURCES 2						
Disturbances to Cultural Resources Listed or Eligible for NRHP	Sites	Field review	Assure protection of high value sites.	Quarterly	5% / 100%	If vandalism or natural deterioration threatens integrity of site.
CULTURAL RESOURCES 3						
Project Clearances and Site Marketing	Acres	Field review	Assure protection of cultural sites.	Each Project	+5% / 100%	When site marking is insufficient to protect sites or site disturbance indicates ineffectiveness of system.
WILDERNESS 1						
Wilderness Use	Recreation Visitor Days	RIM Report	Compare actual and planned outputs.	Annually	+20% 80%	When actual use exceeds planned use 30% after 3 years.
WILDERNESS 2						
Condition of Wilderness Use Areas	Sites	LAC System: Site Inspections	Compare actual and desired site conditions.	Annually	+10% / 90%	When 10% of identified sites exceed LAC in one year.

Actions, Effect or Resource	Units	Data Source	Intent	Frequency	Precision/ Reliability	Variability which Initiates Evaluation
WILDLIFE 1						
Fisheries Habitat Trend	Index numbers	GAWS: Field Sampling: Aquatic ecosystem inventory	Assure fisheries habitat is being maintained or enhanced.	Every 4 years.	±15% / 85%	When comparison to initial baseline monitoring on aquatic sstems indicates significant statistical down-ward trend of fish habitat after 4 years.
WILDLIFE 2						
Management Indicator Species Habitat Trend	Acres	State G&F Surveys; Field Inspections; RO3 WILD	Assure MIS habitat maintenance	Annually	±20% / 80%	When comparison of selected indicator species indicates a downward trend of habitat that deviates ± 20% from the planned rate after 4 years.
WILDLIFE 3						
Horizontal and Vertical Diversity; and Old Growth	Acres	Range Analysis reports: TMIS	Compare actual and planned outputs.	Annually	±20% / 80%	When actual changes vary from that expected by ± 20% after 5 years.
WILDLIFE 4						
Bald Eagle and Peregine Falcon - Habitat Trend	Acres	Field surveys; U.S. F.& W.S surveys; State G.&F. surveys;	Assure T&E habitat maintenance.	Annually	±20% / 80%	When actual changes vary by the % determined to be significant in the individual species plan.
WILDLIFE 5						
Selected Species of State & Federally Listed T&E and Sensitive Plants and Animals - Habitat Trend	Acres	Field surveys U.S.F.&W.S. surveys State Agencies surveys	Assure habitat maintenance.	Annually	±20% / 80%	When actual changes vary by the % determined to be significant in the individual species plan.

Actions, Effect or Resource	Units	Data Source	Intent	Frequency	Precision/ Reliability	Variability which Initiates Evaluation
RANGE 1						
Permitted Grazing Use (Livestock)	Animal Unit	RAMIS; Term, Temporary and Other permits	Compare actual and planned outputs.	Annually	±5% / ±95%	When forestwide permitted use varies by ± 10% from planned levels each year.
RANGE 2						
Grazing Capacity and Trend	Animal Unit	Range analysis: PU studies; RAMIS	Compare actual and planned outputs.	Every Five Years	±10% / ±80%	When forestwide capacity varies by ± 10% of the planned rate to attain balance.
RANGE 3						
Allotment Management Plans	Plans	RAMIS	Attain satisfactory management on all allotments.	Annually	±5% / ±95%	Variation of ± 25% from having all allotments with AMP's which will attain satisfactory management by the end of the decade.
TIMBER 1						
Regeneration Harvests - Clearcut and shelterwood	Acres	Timber Mgmt Information System; Field Review	Achieve balanced age class distrib-ution; compare actual and planned outputs.	Annually	±10% / ±90%	When actual treatment varies by ± 25% from planned after 3 years.
TIMBER 2						
Intermediate Harvest	Acres	Timber Mgmt Information System; Field Review	Achieve balanced age class distrib-ution; compare actual and planned outputs.	Annually	±10% / ±90%	When actual treatment varies by ± 25% from planned after 3 years.

Actions, Effect or Resource	Units	Data Source	Intent	Frequency	Precision/ Reliability	Variability which Initiates Evaluation
TIMBER 3						
Adequate Restocking of Harvested Lands	Acres	Measurements of random plots in regeneration areas.	Insure lands are adequately stocked.	Alternate years after harvest or planting.	±20% / 80%	Indication of Inadequate stocking after 5 years.
TIMBER 4						
Timber Stand Improvement	Acres	SILVA report	Compare actual and planned outputs	Annually	±10% / 80%	When actual treatment varies by ± 20% from planned after 5 years.
TIMBER 5						
Sawtimber Offered and Sold	Million Board Feet	PTSAR report	Compare actual and planned outputs.	Annually	±10% / 90%	When cumulative deviation of actual treatment is ± 20% of planned after 3 years.
TIMBER 6						
Size Limits for Timber Cutting Units	Acres	Environmental Assessments; Program reviews	Determine if size limits should be revised.	Every third year	±25% / 80%	When resource objectives are not being met using current size limitations.
TIMBER 7						
Land Suitability for Timber Production	Acres	TES report; Stand exams; Timber Inventory.	Identify changes in land suitability	Before Plan revision	±10% / 80%	Indication that areas need reclassification.
TIMBER 8						
Regeneration Harvest in Aspen Type	Acres	TMIS; Field review	Achieve balanced age class distribution.	Annually	±10% / 90%	When actual treatment varies ± 20% from planned after 3 years.

Actions, Effect or Resource	Units	Data Source	Intent	Frequency	Precision/ Reliability	Variability which Initiates Evaluation
TIMBER 9						
Small Sales Offered and Sold	Million Board Feet	TMIS; Field Review	Compare actual and planned outputs.	Annually	±10% / 90%	When actual treatment varies by ± 25% from planned after 5 years.
TMBER 10						
Skyline Demonstration	Environmental and Social Effects	Demonstration Sales Monitoring Items	Determine effects of applying skyline technology	During and after sales as necessary	Varies by item monitored	Demonstration monitoring team will evaluate all skyline activities. Plan evaluation if cumulative effects deviate by ± 20% after 3 years.
FIREWOOD 1						
Permitted firewood	Cords	PTSAR: Annual Free Use Report.	Compare actual and planned outputs.	Annually	±30% / 70%	When permitted firewood varies from planned output by ± 20% after 5 years.
FIREWOOD 2						
Regeneration Harvest in Woodland Type	Acres	TMIS: Field review	Achieve balanced age class distribution	Annually	±10% / 90%	When actual treatment varies by ± 20% from planned after 3 years.
SOIL & WATER 1						
Watershed Condition	Acres	Allotment Management Plans: Watershed Condition Report	Compare actual and planned outputs.	Annually	±10% / 85%	If estimated improvement acres are less than 20% of predicted after 5 years.
SOIL & WATER 2						
Best Management Practices	N/A	Field review	Assure BMP's are being implemented.	1 project annually	±20% / 90%	Failure to implement at least 90% of required BMP's.

Actions, Effect or Resource	Units	Data Source	Intent	Frequency	Precision/ Reliability	Variability which Initiates Evaluation
SOIL & WATER 3						
Riparian Condition	Acres	Direct and indirect treatment reports.	Assure improvement is occurring.	Annually	±20% / 90%	If estimated mprovement is less than 80% of predicted after 5 years.
SOIL & WATER 4						
Aquatic Ecosystem Condition	Aquatic Ecosystem Parameters	Systematic Field Sampling	Provide baseline in-formation on health of aquatic ecosystem	7 sites annually	±10% / 80%	Acceptable variation will be determined after 5 years of baseline data collection.
SOIL & WATER 5						
Effect of Activities on Aquatic Ecosystem	Aquatic Ecosystem Parameters	Systematic Field Sampling	Assure activities do not degrade aquatic ecosystems.	5 projects annually	±10% / 80%	Statistically significant degradation of aquatic ecosystem after 3 years.
SOIL & WATER 6						
Effects of Timber Harvest and Roads on Water Quality.	Selected water quality parameters	Project monitoring above & below high impacting activities.	Assure maintenance of water quality.	1 project	±20% / 80%	Statistically significant water quality degradation.
AIR QUALITY 1						
Visibility in Class I areas	N/A	Automated Camera System	Obtain baseline visibility data to determine air degradation	Two times Day	±10% / 90%	Actual and potential visibility degration will be evaluated after collection of sufficient baseline data.
LANDS 1						
Rights-of-way Acquired	Number of cases	MAR Report	Compare actual and planned outputs.	Annually	±5% / 95%	When actual acquisitions are less than 80% of planned after 5 years.

Actions, Effect or Resource	Units	Data Source	Intent	Frequency	Precision/ Reliability	Variability which Initiates Evaluation
FACILITIES 1						
Forest Transportation System	Miles of open road	TIS report	Evaluate the effectiveness of road management.	Annually	±20% / 80%	When miles of open road varies by ± 20% of planned levels after 3 years.
FACILITIES 2						
Road Construction/ Reconstruction	Miles	MAR	Compare actual and planned amounts	Annually	±20% / 80%	When miles of construction/ reconstruction varies by ±20%
FACILITIES 3						
Timber Purchaser Road Construction/ Reconstruction	Miles	MAR	Compare actual and planned amounts	Annually	±20% / 80%	When miles of construction/ reconstruction varies by ±20% of planned after 3 years.
FIRE MANAGEMENT 1						
Actions, Effect, or Effectiveness of Fire Suppression	N/A	Field Reviews; Fire reports; Fire management analysis	Determine if suppression programs are cost effective and meet management area objectives	Annually as appropriate	±10% / 90%	When compliance with standards and guidelines is not insured on at least 90% of wildfires and when analysis indicates planned budget is not cost effective.
FIRE MANAGEMENT 2						
Fuel Treatment	Acres	MAR Report	Compare actual and planned outputs.	Annually	±10% / 90%	When 80% of prescribed treatment is not accomplished within one year of planned.

Actions, Effect or Resource	Units	Data Source	Intent	Frequency	Precision/ Reliability	Variability which Initiates Evaluation
INSECT AND DISEASE 1						
Levels of Insects and Disease Organisms Affecting Forest Lands	Acres	Aerial surveys: Field surveys	Determine if insect and disease levels increase to potentially damaging levels	Every three years	±40% / 70%	When survey indicates out-break could become epidemic.
COST 1						
Unit Costs for Selected Activities	$	PAMARS	Determine cost changes and efficiencies. Verify ability to implement forest plan	Annually	±10% / 90%	When actual unit costs vary from plans by ± 50% after 5 years.
COST 2						
Total Forest Budget	$	PAMARS	Evaluate the rate of implementation.	Annually	±5% / 95%	When actual budget varies from planned by ± 10% after 5 years.
COST 3						
Budget by Program Component	$	PAMARS	Evaluate the ability to implement the plan based on national program emphasis	Annually	±5% / 95%	When budgets vary by ± 10% from planned after 5 years.

Page 186 is blank.

Glossary

A

ACEQUIA	A water conveyance ditch used primarily for irrigation purposes.
ACQUISITION OF LAND	Obtaining full ownership rights by donation, purchase, exchange, or condemnation.
ACRE-FOOT	A measurement of waer volume that would cover one acre to a depth of one foot, equal to 43,560 cubic feet or 325,851 gallons.
ACRES OF FINAL REMOVAL	A constraint used in the FORPLAN model to specify the minimum or maximum acres of suitable timber to be harvested by analysis area or forest-wide during any time period to ensure that restocking the area within 5 years of final harvest will not exceed the Forest's personnel and fiscal abilities.
ACTIVITY	Actions, measures, or treatments which directly or indirectly produce, enhance, or maintain outputs or achieve management objectives.
ACTIVITY FUELS	Woody debris left over from any activity such as firewood cutting, precommercial thinning, timber harvesting, and road construction.
ADMINISTRATIVE SITE	A site which primarily exists for general administrative purposes. It may include office, warehouse, outside storage, parking areas, housing, pasture for livestock or work centers.
ADMINISTRATIVE UNIT	All the National Forest System lands for which one Forest Supervisor has management responsibility.
ADVISORY COUNCIL ON HISTORIC PRESERVATION	The independent Federal agency charged with advising the President and Congress on historic preservation matters. The Council reviews and comments on Federal projects that affect properties listed in, or eligible for, the National Register of Historic Places.
AFFECTED ENVIRONMENT	The natural and physical environment and the relationship of people to that environment that will be changed by action.
AGE CLASS	Interval of years, commonly 20, into which trees are grouped for management. Example: 1-20 years, 21-40 years.
AIRSHED	The air in a specific geographic region, in which air quality is managed.
ALIENATED MINERAL RIGHTS	Ownership of the mineral rights by someone other than the surface rights owner.
ALLOCATION	The assignment of management prescriptions to a particular land area to achieve management goals and objectives of an alternative.
ALLOTMENT	See RANGE ALLOTMENT.

---------- Glossary ----------

ALLOTMENT ANALYSIS	Analysis conducted on individual allotments at an intensity level commensurate with management problems and opportunities. These generalized categories of analysis intensity are as follows: Category I. Generally adequate cooperative management with major portion of range in no-apparent or upward trend. Problems minor. Category II. Inadequate management with portions of the allotment in downward trend. Management changes and/or improvements will correct the situation. Permittee cooperation is expected. Category III. Inadequate management and/or improvements. Downward trend over a significant portion of the grazed area of the allotment. Permittee cooperation in reducing numbers and improving management can be expected. Category IV. Overstocked range on which reduction in numbers is necessary and the permittee cannot be persuaded to cooperate. An appeal is anticipated. Category V. Increases in permitted numbers. Documents must be prepared in advace for justification of increase in permitted numbers.
ALLOWABLE SALE QUANTITY	"The quantity of timber that may be sold from the area of sutiable land covered by the Forest Plan for a time period specified by the plan. This quantity is usually expressed on an annual basis as the 'average annual allowable sale quantity'." [36 CFR 219.3]
ALTERNATIVE	A mix of management prescriptions applied in specific locations to achieve a desired emphasis as expressed in goals and objectives.
AMENITY	The pleasurable, educational, or esthetic features of the land or resources.
ANALYSIS AREA	The basic land unit of analysis which is used to allocate and schedule Management prescriptions. Each analysis area is considered to be homogeneous interms of input requirements and output response to management practices. They are composed of capability areas with similar physical attributes, management costs are resource yields.
ANALYSIS OF THE MANAGEMENT SITUATION (AMS)	A phase in the planning process that determines the ability of the planning area to supply goods and services in response to society's demand.
ANIMAL MONTH (AM)	One animal grazing for one month.
ANIMAL UNIT MONTH (AUM)	The quantity of forage required by one mature cow (1,000 lbs.), or the equivalent, for one month.

---------- Glossary ----------

ARTERIAL ROADS	Roads that provide service to large land areas and usually connect with public highways or other Forest arterial roads to form an integrated network of primary travel routes for maximum mobility and travel efficiency rather than for a specific resource management service. They are usually developed and operated for long-term purposes and constant service.
AVAILABLE FOREST LANDS	Lands that have not been legislatively withdrawn by Congress or administratively withdrawn by the Secretary of Agriculture or Forest Service Chief from timber production.
AVOIDANCE AREA	An area having one or more physical, encironmental, institutional or statutory impediments to corridor designation.

B

BACKGROUND	Visual management zone where texture and detail perceived is weak to nonexistant. Patterns of vegetative groupings are evident in this distance zone, which ranges from the middle ground to infinity.
BASAL AREA	The area (in square feet) of the cross-section of a tree trunk near its base, generally at breast height (4.5 feet above ground level), including the bark. Generally expressed as square feet per acre.
BASE IN EXCHANGE	National Foest lands available for exchange to other landowners.
BASE SALE SCHEDULE	“A imber sale schedule formatted on the basis that the quantity of timber planned for sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade, and this planned sale and harvest for any decade is not greater than the long-term sustained yield capacity.” [36 CFR 219.3 NFMA Regulations]
BENCHMARK	An alternative used to establish standards by which to compare other alternatives considered in detail. Benchmark alternatives include minimum level, maximum resource levels, and maximum present met value levels. See Appendix B of the EIS for discussion.
BENEFIT-COST-RATIO	The total discounted benefits of an activity divided by the total discounted costs.
BIG GAME	Those species defined by law which are managed as a sport hunting resource, such as deer, turkey, elk, and bear.
BIOLOGICAL GROWTH POTENTIAL	The average net growth attainable in a fully stocked natural forest stand.
BOARD FOOT	The amount of wood in a board: 1 inch thick, 12 inches long, and 12 inches wide.

---------- Glossary ----------

BROADCAST BURN	A controlled fire which burns a designated area to reduce fuel or as a silvicultural treatment.
BROWSE	Twigs, leaves, and young shoots of trees and shrubs on which animals feed. The shrubs used by big game animals for food.

C

CABLE LOGGING	A log transporting system utilizing wire cables to remove the logs from steep ground. Logs are attached to a carriage that runs on a cable and moved generally uphill to a road, with the load partially or wholly suspended.
CALVING AREAS (ELK)	The areas, usually on spring range, where elk cows give birth to calves and tend them during their first few days or weeks.
CANOPY	The more or less continuous cover of branches and foliage formed collectively by the crowns of trees and other woody growth.
CAPABILITY	The potential of the land to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and at a given level of intensity. Capability depends upon site conditions such as climate, slope, landform, soils, and geology, as well as the application of management practices, such as silviculture or resource protection.
CAPABILITY AREA	An area of land used to estimate response to various management practices, resource values, output coefficients, and multi-resource activities. Capability areas are based on potential natural vegetation as determined in soil and vegetation inventories.
CAPABLE FOREST LAND	Land with a biological growth potential that is equal to or that exceeds the minimum standard for timber production. Trees will grow to height of at least 40 feet in 100 years.
CARRYING CAPACITY	The optimum density of an animal species which a given environment is capable of sustaining, without deteriorating that environment.
CAVITY NESTERS	Wildlife species that utilize tree cavities. Primary cavity nesters excavate their own hole. Secondary cavity nesters use natural cavities or cavities created by primary cavity nesters.

---------- Glossary ----------

CLASS I AIR QUALITY AREA	A classification for the protection from visibility impairment from man-made air pollution under Section 169A of the 1977 Amendments to the Clean Air Act. In this Act, Congress had recognized the need to protect the aesthetic value of visibility in national parks and wilderness areas by establishing a national visibility goal in Section 169A. The section states that "Congress hereby declares as a national goal the prevention of any future, and the remedying of any exiting, impairment of visibility in mandatory Class I Federal areas which impairment results from man-made air pollution."
CLEARCUT HARVEST	Silvicultural system used to harvest mature trees in one cut for the purpose of regenerating a new even-aged stand. It involves the removal of all standing trees over a given area of land in a single cut. Clearcut areas may occur in blocks, patches or strips.
CLIMATIC RELIEF	Escaping from uncomfortable temperatures, especially in the summer months, by going to a place which has a significantly more comforatble temperature range.
CLIMAX	The culminating stage in plant succession for a given site: where the vegetation has reached a highly stable condition.
CLOSURE	An administrative order restricting either the location, timing, or type of use in a specific area.
COMMERCIAL FOREST	Forest land that is producing or is capable of producing crops of industrial wood and (a) has not been withdrawn by Congress, the Secretary, or the Chief; (b) existing technology and knowledge is available to ensure timber production without irreversible damage to soils productivity, or watershed conditions; and (c) existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that adequate restocking can be attained within 5 years after final harvesting.
COLD-WATER FISHERY	Stream and lake waters which support predominately cold-water species of game fishes (trout), which have a maximum sustained water temperature tolerance of about 70 degrees fahrenheit in the summer.
COLLECTOR ROADS	Roads which serve smaller land areas and are usually connected to a Forest arterial road or public highway. They collect trafic from forest local roads or terminal facilities. Forest collector roads are generally operated for constant service.
COMMERCIAL THINNING	Any type of thinning tha tproduces merchantable material such as poles, posts, and pulpwood in immature timber stands. Thinning improves the quality, composition and growth of the remaining trees.
COMPARTMENT	A subdivision of forest area used to plan timber harvests. The boundaries are often based on topographical features.

---------- Glossary ----------

CONCESSION PERMIT	A permit which authorizes private individuals to operate Forest Service facilities, as a commercial profit-making venture.
CONSTRAINT	A quantification of the minimum or maximum amount of an output or cost that could be produced or incurred in a given time period.
CONSUPTIVE USE	Those uses of resources that reduce the supply, such as logging and mining.
CONTROLLED BURN	See PRESCRIBED FIRE.
CONVENTIONAL LOGGING	This term refers to the "tractor an drubber-tired skidder logging system" which is the customary system used in Northern New Mexico for logging on slopes of 40-percent gradient or less. With this system logs are skidded (transported) from stump to collectionpoints by dragging the logs behind tractors or skidders.
CORD	A unit of gross volume measurement for stacked round or split wood. A standard cord is 4 feet by 4 feet by 8 feet or 128 cubic feet. A standard cord may contain 60 to 100 cubic feet of solid wood depending on the size of the pieces and the compactness of the stack.
CORRIDOR	"A linear strip of land identified for the present or future location of transportation or utility right-of-way within it boundaries." [36 CFR 213.3]
COST COEFFICIENTS	Values which relate a unit of measure such as an acre of land to a particular dollar cost in a specific period of time.
COST EFFICIENCY	A comparative measure of economic efficiency determined by maximizing the present net value of an alternative, subject to meeting the objectives of that alternative.
COUNCIL ON ENVIRONMENTAL QUALITY (CEQ)	An advisory council to the President established by the National Environmental Policy Act of 1969 that reviews federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters.
COVER	Plants, living or dead, used by wildlife for protection from predators, weather, or in which to reproduce. See Hiding Cover. See Thermal Cover.
COVER/FORAGE RATIO	The ratio of cover (usually conifer types) to foraging areas (natural openings, clearcuts, etc.).
CUBIC FOOT	In timber management a volume measured as a one foot by one foot by one foot of solid wood.
CULMINATION OF MEAN ANNUAL INCREMENT (CMAI)	Point in time in the age of a forest stand in which the mean annual growth increment no longer increases.

---------- Glossary ----------

CULTURAL RESOURCES	The physical remains (artifacts, ruins, burial mounds, petroglyphs, etc.) which represent former human cultures.
CURRENT DIRECTION	The programs level currently being used to manage the Forest.
CUTTING CYCLE	The planned, recurring period of time between successive cuttings or harvests in a stand of trees.

D

DATA	Any record measurements, facts, evidence, or observations reduced to written, graphical, tabular, or computer form.
DEPARTURE	Timber harvest schedule which deviates from nondeclining even flow by exhibiting a planned decrease in the timber sale and harvest schedule in the future. It is characterized as a temporary increase over the base sale schedule, without impairing the long-term sustained-yield.
DEVELOPED RECREATION	Recreation that requires facilities that are provided for concentrated public use: such as campgrounds, picnic areas, interpretive sites, ski areas, or swimming areas.
DIAMETER AT BREAST HEIGHT (DBH)	Diameter of a tree at breast height which is 4.5 feet above the highest ground point at a tree's base.
DISCOUNT RATE	The interest rate used in plan formulation and evaluation for discounting future benefits and computing costs to a common time basis.
DISPERSED RECREATION	Recreation use that occurs outside of developed sites and requires few improvements other than roads and trails. Representative activities are hiking, backpacking, diriving for pleasure, viewing scenery, snowmobiling, cross-country skiing, hunting, off-road vehicle use, and berry picking.
DIVERSITY	"The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan." [36 CFR 219.3] See Horizontal Diversity. See Vertical Diversity.
DIVERSITY INDEX	A number that indicates the relative degree of diversity in habitat per unit area. The index reports or a scale of 0 to 1.0 with 1.0 being the most diverse. The index measures the variation between stages within each vegetation type.
DIVERSITY UNIT	An 8,000 – 12,000 acre compartments, watershed boundaries, big game seasonal ranges and other physical land areas. The purpose is for porject planning and evaluation of factors such as age class distribution, old growth requirements, seral diversity and cover1 forage distribution.

---------- Glossary ----------

DIAMETER AT ROOT CROWN (DRC)	Stem diameter as measured at 6 inches above ground level.

E

ECONOMIC EFFICIENCY	The relative amount of outputs (benefits) versus inputs (costs). It is usually measured by present net values.
ECOSIM	A computer program used to simulate timber growth and yield based on site index, basal area, species, mortality, mistletoe, and silvicultural practices.
ECOSYSTEM	The interaction of a group of organisms and their environment.
EDGE	The place where plan communities meet or where successional vegetative stages come together. It often contains organisms from both communities, as well as those restricted to the interface area. The number of species present is often greater than the surrounding communities.
EFFECTS	Results expected to be achieved from implementation of the alternatives relative to physical, biological, economic, and social factors. There are direct effects, indirect effects, and cummulative effects.
ELK WALLOWS	Shallow pools of water and mud normally located in boggy areas or seeps that are an important habitat component for bull elk.
ENDANGERED SPECIES	A species which is in danger of extinction throughout all or a significant portion of its range, and which have been designated under the provisions of the Endangered Species Act of 1973.
ENDEMIC	Native or confined to a certain region; having a comparatively restricted distribution.
ENDING INVENTORY	The remaining timber inventory volume at the end of the final period of the planning horizon. It is used in the calculation of long-term sustained yield.
ENVIRONMENTAL ANALYSIS	An analysis of alternatives and their short and long-term environmental effects which include physical, biological, economic, social, and environmental design factors and their interactions.
ENVIRONMENTAL ASSESSMENT	A concise public document required by NEPA regulations, which displays a comparison of the effects of the alternative on the environment.

---------- Glossary ----------

F

FACILITY CONDITION CLASS	The rating system used in the Recreation Information Management system to classify the condition and maintenance needs of recreation sites and areas. Class I: Satisfactory (facility safe and sanitary); Class 2: Substandard (facility safe and sanitary but substandard); Class 3: Heavy Maintenance (facility unsafe but economically repairable); Class 4: Replacement (facility unsafe); Class 5: Betterment (facility unsafe, requires different kind of facility; Class 6: Nonexisting-substitute (same as Class 5, but for site development); Class 7: Nonexisting (add new facility); Class 8: Eliminate.
FAWNING AREAS	The areas, usually on spring ranges, where deer give birth to fawns and tend them for a few days or weeks.
FEE SITE	A Forest Service recreation area in which users must pay a fee. Fee sites must meet certain standards and provide certain facilities.
FINAL REMOVAL CUT	Final cut in a shelterwood harvest that removes the remaining mature trees to provide full sunlight to the regenerated crop.
FIRE HAZARD	A measure of fire spread and resistance to control as a function of the amount and arrangement of fuels and weather conditions.
FIRE RISK	The probability of a fire starting from natural or man-made causes.
FIRE SUPPRESSION	Any act taken to slow, stop or extinguish a fire including line construction, backfiring and application of water or chemical retardants.
FISH HABITAT	Streams, lakes, and reservoirs that can support fish.
FISHERIES	Steams, lakes, and reservoirs that support fish utilized by angler's.
FLOODPLAIN	That portion of a stream valley, adjacent to the channel which is covered with water, when the stream overflows its banks at flood stages.
FORAGE	All browse and nonwoody plants that are available to livestock or wildlife for grazing or harvesting for feeding. The weight may be expressed as either green, air dry or oven dry. The term may also be modified as to time of production such as annual, current year's or seasonal forage production.
FOREGROUND	The Visual Management System zone where the distance frrom a road, trail, or use area at which objects are percieved in detail. For instance, indifidual boughs of a tree are perceptible. The zone ranges from 0 to ½ mile from the observer.

---------- Glossary ----------

ENVIRONMENTAL IMPACT STATEMENT (EIS)	Documentation of environmental effects and action required for major Federal actions under Section 102 of the National Environmental Policy Act (NEPA), and released to the public and other agencies for comment and review. It is a formal document that must follow the requirements of NEPA, the Council on Environmental Quality (CEQ) guidelines, and directives of the agencies responsible for the project proposal.
EPHEMERAL WAERCOURSE	Duration of flow is in direct response to runoff events such as rainfall or snowmelt and is normally not present during dry seasons.
EROSION	The process whereby earthy or rocky material is worn away, loosened, dissolved and removed from the earth's surface. Natural erosion is the wearing away of the earth's surface by agents under environmental conditions of climate, vegetation, etc., undisturbed by man. Sheet erosion is the removal of a fairly uniform layer of soil from the land surface by runoff water, without the development of conspicuous water channels.
ESSENTIAL HABITAT	That portion of a wild animal's habitat that is essential for the continued survival of the species. "Essential" is a formal designation.
EVAPOTRANSPIRATION	Process by which water moves from the soil to the atmosphere by evaporation from the soil or transpiration through plants.
EVEN-AGED MANAGEMENT	"The application of a combination of actions that results in the creation of stands in which trees of essentially the same age grow together. Managed even-agedforests are characterized by a distribution of stands of varying ages (and, therefore, tree sizes) throughout the forest area. The difference in age between trees forming the main canopy level of a stand usually does not exceed 20 percent of the age of the stand at harvest rotation age. Regeneration in a particular stand is obtained during a short period at or near the time that a stand has reached the desired age or size for regeneration and is harvested. Clearcut, shelterwood, or seed tree cutting methods produce even-aged stands." [36 CFR 219.3]
EVEN-FLOW	Maintaining a constant supply of timber from decade to decade.
EXCLUSION AREA	An area having statutory prohibition to right-of-way for lineal facilities or corridor designation.
EXTENSIVE GRAZING	Season-long use of rangelands, with distribution of livestock occurring through riding, salting, etc.
EYRIE	The nesting site of a bird of prey such as a falcon or hawk.

FOREST AND RANGELAND RENEWABLE RESOURCES PLANNING ACT OF 1974 (RPA)	An act of Congress requiring the preparation of a program for the management of the National Forests' renewable resources and of land and resource management plans for units of the National Forest System. It also requires a continuing inventory of all forest and rangelands and renewable resources.
FORESTED LAND	"Land at least 10 percent occupied by forest trees of any size or formerly having had such tree cover and not developed for non-forest use. Lands developed for non-forest use include areas for crops, improved pasture, residential, or administrative areas, improved roads of any width, and adjoining road clearings and powerline clearings of any width." [36 CFR 219.3]
FOREST DEVELOPMENT ROADS	Roads that are part of the Forest transportation system, which are mapped and inventoried in the Transportation Inventory System.
FOREST SUPERVISOR	The official responsible for administering the National Forest System lands in a Forest Service administrative unit who reports to the Regional Forester.
FORPLAN	A linear programming system used to schedule and allocate resource outputs and to perform budgeting operations in order to develop and analyze Forest planning alternative actions.
FUELBREAK	Any natural or constructed barrier used to segregate, stop, and control the spread of fire or to provide a control line from which to work.
FUEL MANAGEMENT	Manipulation or reduction of fuels to meet Forest protection and management objectives.
FUEL MODEL	A simulated fuel complex for which all the fuel descriptions required by the mathematical fire spread model have been specified.
FUEL TREATMENT	The rearragnement or disposal of fuels (living and dead vegetative materials) to reduce the fire hazard.
FUEL CAPACITY RANGE	Rangelands that are accessible to livestock, produce forage or have inherent forage producing capabilities, are stable because of effective ground cover and can be grazed on a sustained yield basis.
	G
GAME SPECIES	Any species of wild life or fish normally harvested by hunters, trappers, and fishermen under state or federal laws.

GENERAL AQUATIC WILDLIFE SYSTEM (GAWS)	A family of computer programs for storage retrieval and analysis of data pertaining to the fisheries resource.
GOAL	"A concise statement that describes a desired condition to be achieved sometime in the future. It is normally expressed in broad, general terms and is timeless in that it has no specific date by which it is to be completed. Goal statements form the principal basis from which objectives are developed." [36 CFR 219.3 NFMA Regulations]
GOODS AND SERVICES	The outputs produced by Forest resources, the tangible and intangible values of which are expressed in market and non-market terms.
GRAZING ASSOCIATION	A group of grazing permittees that work as a group rather than individually.
GRAZING CAPACITY	The maximum number of livestock (AUM's) that can graze an area without damage to the vegetation or related resources.
GRAZING PERMITTEE	An individual who has been granted written permission to graze for a specific period on a range allotment.
GRAZING SEASON	A period of grazing to obtain use of the forage resource for which grazing permits are issued.
GRAZING SYSTEM	Grazing management which defines systematically recurring periods of grazing and deferment for two or more management units.
GROUNDWATER	Subsurface water in a saturated zone of a geologic stratum.
GROWING STOCK LEVEL (GSL)	The stand density level, usually expressed as number of trees per acre or basal area per acre in square feet.
GUIDELINE	As indication or outline of policy or conduct.

H

HABITAT	The natural environment of a plant or animal where the organism may be found and where all essentials for its development and existance are present. Habitats are described by their geographical boundaries, or with such terms as "shady woodlands", "banks of streams," "dry hillsides," etc.
HABITAT CAPABILITY INDEX	An index with a range from 0 to 1, with 1 being the optimum. "The index displays the percent of acres in an area meeting selected wildlife species habitat requirements for feeding and cover.
HABITAT CAPABILITY	A computer model used to evaluate the capability of an area to support selected wildlife species. The model evaluates the mix and proportion of structural stages in different vegetation types and determines a habitat capability index.

---------- Glossary ----------

HABITAT TYPE	An aggregation of all land areas potentially capable of producing similar plan communities at climax.
HAZARD REDUCTION	Physical reduction of fuel to reducefire hazard, or removal of materials which may pose a threat to visitor safety.
HERBICIDE	A chemical compound used to kill or control growth of undesirable plant species.
HIDING COVER	Hiding cover is vegetation that will hide 90 percent of an elk from view at a distance of 200 feet or less.
HORIZONTAL DIVERSITY	The diversity that results from the number of plant communities or successional stages.
HYDROLOGIC FUNCTION	The behavioral characteristics of a watershed described in terms of ability to sustain favorable conditions of water flow. Favorable conditions of water flow are defined in terms of water quality, quantity, and timing.

I

IMMATURE SAWTIMBER	Trees that are 9 inches in diameter at breast height (dbh) and larger but have not reached full maturity.
IMPLEMENTING REGULATIONS	Regulations generated by an agency to implement Acts of Congress.
IN-HOLDINGS	Lands within the proclaimed boundaries of a National Forest that are owned by some other agency, organization, or individual.
INDICATOR SPECIES	A wildlife species whose presence in a certain location or situation at a given population level indicates a particular environmental condition. Population changes are believed to indicate the effects of management activities on habitat quantity, quality and a number of other wildlife species.
INDIGENOUS SPECIES	Species historically native to an area.
INDIVIDUAL TREE SELECTION	Involves the removal of selected trees from specified age classes over the entire strand in order to meet predetermined goals of age class and species distributed in the remaining stand.
INFORMATION NOTICE	A letter attached to a mineral lease advising the applicant that constraints in addition to standard stipulations in the lease may be added once a drilling plan is submitted.
INSTREAM FLOWS	Flows needed to meet seasonal streamflow requirements for maintaining aquatic ecosystems, visual quality, and recreational opportunities at acceptable levels.

INTEGRATED PEST MANAGEMENT	"A process for selecting strategies to regulate forest pests in which all aspects of a pest-host system are studies and weighed. The information considered in selecting appropriate strategies includes the impact of the unregulated pest population on various resource values, alternative regulatory tactics and stratgies, and benefit/cost estimates for these alternative strategies. Regulatory strategies are based on sound silvicultural practices and ecology of the pest-host system and consist of a combination of tactics such as timber stand improvement plus selective use of pesticides. A basic principle in choice of strategy is that it be ecologically compatable or acceptable." [36 CFR 219.3]
INTEGRATED RESOURCE MANAGEMENT	Land management philosophy based on the premise that all resource are interconnected through a complex series of relationships which causes any management activity to have an effect on all associated resources. A process of land management planning whereby each management activity must have clearly stated objectives so that resources involved can be identified, the relationships defined, and the effects or impacts reasonably prepredicted.
IINTEGRATED STAND MANAGEMENT	A concept used to design timber sales to accomplish multi-resource objectives. It is applied by identifying stands or portions of stands and developing unique prescriptions which satisfy objectives for appropriate resources such as wildlife, timber, soil, water, and recreation. That combination of prescriptions which best satisfies objectives is then selected and applied on the ground.
INTENSIVE GRAZING	Grazing management that controls distribution of cattle and duratn of use on the range, usually by fences, so parts of the range are rested during the growing season.
INTERDISCIPLINARY TEAM (ID TEAM)	A group of individuals with skills from different resources assembled because no single discipline is sufficient to adequately identify and resolve issues and problems.
INTERMEDIATE CUTTING	Any removal of trees from a stand between the time of its formation and the regeneration cut. Most commonly applied intermediate cuttings are release, thinning, improvement, and salvage.
INTERMITTENT WATERCOURSE	Duration of flow is extended beyond the immediate response to precipitation events by shallow groundwater storage. Flow may occur continuously, but is frequently not present during dry seasons.
INTERPRETIVE SITES	A developed site at which a broad range of natural or cultural history is interpreted or described for the public.
INTOLERANT SPECIES	Those plan species that do not grow well in shade.
IRRETRIEVABLE RESOURCE COMMITMENT	Allocation decision causing loss of production or use of a renewable resource.

---------- Glossary ----------

IRREVERSIBLE RESOURCE COMMITMENT	Allocation decision affecting nonrenewable resources causing permanent loss of those resources.
	K
K-V FUNDS	In 1930, Congress passed the Knutson-Vandenberg Act (K-V Act) to authorize collection of funds for reforestation, timber stand improvement, and protection or improvement of the future productivity on areas cut over by a timber sale.
	L
LIMITS OF ACCEPTABLE CHANGE (LAC)	Limits of Acceptable Change. A new approach to recreation management used to specify acceptable variation in environmental and social conditions for a site or areas. It identifies appropriate management prescriptions to maintain or restore those conditions and establishes monitoring indices to insure management effectiveness.
LAND EXCHANGE	The conveyance of non-Federal land or interest in the land to the Forest Service in exchange for Federal land or interest in the land.
LANDLINE LOCATION	Location of Forest property boundaries.
LESS THAN STANDARD SERVICE LEVEL (LSTD)	Management of developed sites and dispersed areas to provide service below established standards and objectives.
LIMITED SURFACE OCCUPANCY	Stipulations added to a standard mineral lease specifying limitations on specific areas.
LITTER	The uppermost layer of organic debris on the ground under vegetation.
LOCAL ROADS	Roads that connect terminal facilities with Forest collector or arterial roads. The location and standard are determined by that required to serve a specific resource activity, rather than travel efficiency.
LONG-TERM EFFECTS	Action governed by the Forest Plan, generally taking place over a period longer than ten years from the present.
LONG-TERM SUSTAINED YIELD TIMBER CAPACITY (LTSYC)	“The highest uniform wood yield from timber lands being managed for timber production that may be sustained under a specified management intensity consistant with multiple-use objectives.” [36 CFR 219.3]
	M
M	Thousand.
MM	Million.

---------- Glossary ----------

MANAGEMENT AREA	An area that has common direction throughout that differs from neighboring areas. The entire Forest is divided into management areas where common standards and guidelines apply.
MANAGEMENT AREA STANDARDS AND GUIDELINES	Management practices selected and scheduled for application in a specific area to attain multiple use goals.
MANAGEMENT CONCERN	An issue, problem, or a condition which constrains the range of management practices identified by the Forest Service in the plan.
MANAGEMENT DIRECTION	"A statement of multiple-use goals and objectives, the prescriptions, and standards and guidelines for attaining them." [36 CFR 219.3 NFMA Regulations]
MANAGEMENT INDICATOR SPECIES (MIS)	Those species selected in the planning process to analyze effects among alternatives and monitoring the effects of planned management activities on habitat of all wildlife and fish species, including those species that are socially or economically important.
MANAGEMENT INTENSITY	"A Management practice or combination of management practices and associated costs designed to obtain different levels of goods and services." [36 CFR 219.3]
MANAGEMENT PRACTICE	"A specific activity, measure, course of action, or treatment." [36 CFR 219.3]
MANAGEMENT PRESCRIPTION	"Management practices and intensity selected and scheduled for applications on a specific area to attain multiple-use and other goals and objectives." [36 CFR 219.3]
MANAGEMENT TEAM	Decision making group consisting of the Forest Supervisor. Staff Officers, and District Rangers.
MARGINAL ANALYSIS	A type of analysis in which the only costs and benefits considered are those about which decisions can be made. Fixed benefits and costs are not considered.
MATURE SAWTIMBER	Stands of trees in which the managed class has attained a size greater than 12 inches dbh. The stand is generally healthly, as growth rate is not yet negative. Maturity varies by tree species and the quality of site on which the stand is growing.
MBF (THOUSAND BOARD FEET)	A symbol used to indicate 1,000 board feet of wood fiber volume, either in log form or after conversion into lumber.
MCF (THOUSAND CUBIC FEET)	A symbol used to indicate 1,000 cubic feet of wood fiber volume.

MEAN ANNUAL INCREMENT	The total increment of volume growth per acre, usually expressed in cubic feet, up to a given age, divided by that age. Culmination of mean annual increment of growth is the age at which this mean is greatest or reaches its highest point.
MIDDLEGROUND	The visual management zone that ranges from foreground zone to five miles from the observer. The degree of detail perceptable is usually the texture of tree masses or individual tree forms.
MINERAL DEVELOPMENT	The preparation of a proven deposit for mining.
MINERAL ENTRY	The right under the Mining Law of 1872 to enter nonwithdraw public domain land and to explore for, extract, and sell certain locatable minerals, protected by the filing of a mining claim.
MINERAL EXPLORATION	The search for minerals on lands open to mineral entry.
MINERAL PRODUCTION	Extraction of mineral deposits.
MINERAL WITHDRAWAL	Public lands with unique features which are valued by the public or are needed for administrative purposes that are withdrawn from mineral entry under the General Mining Laws and mineral leasing laws.
MINERAL MATERIALS	Deposits of generally lower economic value, which includes sand, stone, gravel, cinders, pumice, and clay. Previously refered to as common variety minerals.
MINERALS, LEASABLE	Coal, oil, gas, phoshate, sodium, potassium, oil shale, sulphur (in Louisiana and New Mexico), and geothermal steam.
MINERALS, LOCATABLE	Those hard rock minerals which are mined and processed for the recovery of the minerals, often metallic, but may include certain nonmetallic minerals, uncommon varieties of mineral materials such as valuable and distinctive deposits of limestone or silica and solid, natural inorganic substance occurring in the crust of the earth, except for the common variety materials and leaseable minerals.
MINIMUM LEVEL MANAGEMENT	The management strategy that would meet only the basic statutory requirements of administering unavoidable, nondiscretionary land uses, preventing damage to adjoining lands for other ownerships, and protecting the life, health, and safety of incidental users.
MINING CLAIM	That portion of the public estate held for mining purposes in which the right of exclusive possession of locatable mineral deposits is vested in the locator of a deposit.
MISTLETOE	Parasitic plants that cause injury to their woody hosts. The most common are dwarf mistletoes that are found on conifers, especieally ponderosa pine and Douglas-fir. Dwarf mistletoe can seriously retard growth and sometimes results in the death of the host tree.

MITIGATE	To learn the severity.
MIXED CONIFER	A mixture, in varying proportions, of ponderosa pine, Douglas-fir, white fir and southwestern white pine. Ponderosa pine constitutes less than 50 percent of the mixture. Occassionally small amounts of Engelman spruce or corkbark fir may also be present.
MMBF (MILLION BOAR FEET)	A symbol used to indicate one million board feet of wood fiber volume either in log form or after conversion to lumber.
MMCF(MILLION CUBIC FEET)	A symbol used to indicate one million cubic feet of wood fiber volume.
MULTIPLE USE	"The management of all the various renewable surface resources of the National Forest System, so that they are utilized in the combination that will best meet the needs of the American people: making the most judicious use of the land for some or all of these resources over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some lands will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output." [36 CFR 219.3]

N

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)	An Act of Congress to declare a National policy which will encourage productive and enjoyable harmony between man and his environment, promote efforts which will prevent or eliminate damage to the environment, stimulate the health and welfare of man, enrich the understanding of the ecological systems and natural resources important to the nation and establish a Council on Environmental Quality.
NATIONAL FIRE DANGER RATING SYSTEM (NFDRS)	System used to rate current and expected fire danger from low to extreme based upon weather, fuels and risk.
NATIONAL FOREST MANAGEMENT ACT (NFMA)	A law passed in 1976 as amendments to the Forest and Rangeland Renewable Resources Planning Act that requires the preparation of Regional and Forest Plans and the preparation of regulations to guide that development.
NATIONAL RECREATION TRAILS	Trails designated as part of the National system of trails authorized by the National Trails System Act. National Recreation Trails provide a variety of outdoor recreation uses in or reasonably accessible to urban areas.

NATIONAL REGISTER OF HISTORIC PLACES (NRHP)	A listing (maintained by the National Park Service) of areas which have been designated as being historical significance. The Register includes places of local and state significance, as well as those of value to the Nation.
NATIONAL WILD AND SCENIC RIVERS SYSTEM	Rivers with outstanding scenic, recreational, geological, fish and wildlife, historic, or cultural values designated by Congress under the wild and Scenic Rivers Act for preservation of their free-flowing condition.
NEST AND ESCAPE TREES	A group of 6 to 9 trees of 14 inches DBH or larger with interlocking branches that provide a means of escape for squirrels.
NET PUBLIC BENEFIT (NPB)	"An expression used to signify the overall long-term value to the nation of all outputs and positive effects (benefits), less all associated inputs and negative effects (costs), whether they can be quantitatively valued or not. The maximization of net public benefits is consistent with the principles of multiple use and sustained yield." [36 CFR 219.3]
NO ACTION ALTERNATIVE	The most likely condition expected to exist in the future if current management direction would continue unchanged.
NO SURFACE OCCUPANCY	Stipulation added to standard mineral lease permitting extraction, but prohibiting occupancy of the surface of the lease.
NONCONSUMPTIVE USE	Use of a resource that does not reduce the supply, such as many types of recreation.
NONDECLINING YIELD (NDY)	A level of timber production planned so that the sale and harvest for any future decade is equal to or greater than the sale and harvest for the preceding decades.
NONFOREST LAND	Land that has never supported forests, and lands formerly forested where timber is precluded by development for other uses. Includes areas used for crops, improved pasture, residential areas, improved roads and adjoining clearings, and powerline clearings of any width. If intermingled in forest areas, unimproved roads and nonforest strips must be more than 120 feet wide. Clearings must be more than 1 acre in size to qualify as nonforest land. Nonforest land is classified as land not suited for timber production.
NON-GAME SPECIES	a State classification of animal species which are not managed as a sport hunting or fishing resource.
NONMARKET VALUED OUTPUTS (WILLINGNESS TO PAY)	Goods and services valued in terms of what a reasonable person would be willing to pay rather than go without the output.
NONSTRUCTURAL RANGE OR WILDLIFE IMPROVEMENT	Modifying existing vegetation to improve the grazing resource or wildlife habitats. Examples are seeding to grass or planting willows along a streamcourse.

---------- Glossary ----------

NOTICE OF INTENT — Written notice to the affected District Ranger by those who intend to engage in mining activity of proposed prospecting, exploration, mining, and mineral processing on the Forest.

O

OBJECTIVE — "A concise, time-specific statement of measurable planned results that respond to pre-established goals. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals." [36 CFR 219.3]

OBJECTIVE FUNCTION — A term in linear programming describing the criteria to be optimized. Examples of objective functions are: maximize timber, maximize livestock foreage, or maximize present net value.

OBLITERATION — Returning the land occupied by a road or trail to production. Usually done by closing, plowing, and seeding the road or trail.

OCCUPANCY TRESPASS — The illegal occupation or possession of National Forest land or property.

OFF-ROAD VEHICLE (ORV) — This includes all mechanical means of transportation (cars, 4-wheel drive pickups, trail bikes, snowmobiles, etc.) that are capable of traveling overland where roads do not exist.

OLD GROWTH — The final successional stange of a stand of trees past full maturity and well into old age, characterized by a high degree of declining health and vigor.

Ponderosa Pine
Ponderosa Pine old growth would have mature and overmature yellow-barked Ponerosa Pines dominating the visual appearance of the area. A portion of these trees will be at least 200 years old and some may be 300 years or older. These trees would frequently be 24 inches or more in diameter. The highest quality old growth would have a substantial portion of the dominants approaching their natural longevity. Individual trees have fire scars near the base, tops may be broken or dead, and there would likely be cavities in the bole of the tree. Where fire is playing a more natural role, the understory has little down woody debris. A significant grass component would be apparent on the Forest floor. Where fire fire is not approaching natural frequencies the woody debris, lack of grasses and younger Ponderosa age classes would be apparent. The stand influenced by amore natural role of fire may be patchy in appearance, as fire occassionally removes a tree or cluster of trees. The seral progression of these patches provide groups of trees varying the age within the the old growth stand. The stand exhibiting fire suppression will trend towards greater homogeneity in the dominant age class. Snags will generally be composed of dead overmature trees in various stages of decomposition.

Mixed Conifer

Mixed Conifer stands would appear as being over mature and the numerous large trees would bein advanced stages of their natural longevity. It would be natural for these trees to be spike topped or weakened by a varied assortment of insects or diseases. Typically the predominant overstory age would be 150 to 170 years or more. Douglas-fir may live 500 years in places on the Santa Fe National Forest. Some of the trees would likely be 24 inches or more in diameter. The stand would typically be multi-storied, uneven-aged, and display a varied composition of snags. The snag component would be comprised of suppressed trees as well as overmature trees killed by insects or diseases. The stand would contain a significant composition of down woody materials. This material is seldom consumed by fire and is often large, coarse, and in advanced stages of decay. These stands offer a more mesic micro-habitat due in part to the high level of canopy closure.

Pinyon/Juniper

Pinyon/Juniper old growth stands will have an evident component of mature and overmature trees which would be reaching the end of their natural longevity. The canopy may appear layered. The age of the overmature trees would exceed 300 years; and the diameter of these trees would be around 14 to 20 inches. Understory with frequent, more natural fire histories will be sparse containing some large woody debris, grasses an shrubs. Understories without the natural presence of fire will contain more large woody debris with less grasses and shrubs.

Spruce/Fir

Spruce/Fir old growth stands would also have a high component of large trees 150 to 170 years old. While Corkbark-fir seldom exceeds two hundred years, some Spruce in this region have lived to be 500 years old. The typical diameter may be 16 to 20 inches but individual trees may attain diameters of 30 or more inches. As with the other species, the older and larger trees will exhibit the best old growth habitat characteristics. The forest floor is typically strewn with large rotting down woody material. If weather and other conditions become extreme; and catastrophic wildfire occurs, the result is frequently complete replacement of the existing old growth stand. Under normal weather patterns fire seldom plays a significant role in this Forest's Spruce-fir stands.

Aspen
Aspen old growth stand occurs at a younger age than with the above listed species. Maturity is often reached in about 80 years. Trees seldom live to be 200 years old. A mature stand is often even aged and much of the stand will occupy the top canopy layer. Over mature stands will show obvious signs of decadence. As the stand breaks down and snags become more obvious, new vegetation will occur in the openings where the snags stand. Mature and overmature aspen seldom exceed 20 inches in diameter. The forest floor is frequently fairly free of debris in mature stands with an increase in ground litter occuring in overmature stands. Vegetation on the forest floor will be composed of grasses, shrubs, and some coniferous species in mature and overmature aspen stands. The situation just described seldom continues for more than a decade. Old growth aspen stands are very short lived. Typically conifers will replace this seral species.

Cottonwood
Cottonwood old growth stands will exhibit a high and relatively dense canopy of over mature trees; giving a galleried forest appearance. The overmature trees will seldom be more than 150 years old. Cottonwood trees typically reach maturity in less than 100 years. Several of the mature and overmature trees could have diameters in excess of 36 inches. The understory may be comprised of multiple layers of vegetation such as shade tolerant shrubs or trees. The stand will have large woody debris on the forest floor which may have been washed in by flood waters or deposited by large branches or tops breaking off of the trees. These old growth trees make wonderful snags when they die; as they will likely have cavities and other favorable conditions for many animal species.

ON-SITE SOIL LOSS — The movement of soil from the point at which it was formed or the movement of soil from one point to another.

OPERATING PLAN — A written plan, approved by a Forest Officer, prepared by those engaged in mining activity on the Forest, describing mining and mineral processing activities that will likely cause a significant surface disturbance.

OPPORTUNITY COSTS — The value of the benefits foregone or given up due to the effect of choosing another management alternative.

ORV CLOSURE — An administration order closing a land area to specified types of off-road vehicles.

ORV RESTRICTION — An administrative order restricting a land area to specified types of off-road vehicle travel during specific seasons or conditions.

OUTPUT COEFFECIENT — Values which relate an acre of land to a particular quantity of output in a specific period of time.

OUTPUT	The goods and services which are measurable and capable of being used to determine the effectiveness of programs and activities in meeting objectives.
OVERMATURE SAWTIMBER	Older aged stands of trees that have a negative mean annual increment. The age that this occurs varies by tree species and the quality of site on which it grows. See OLD GROWTH.
OVERSTORY	The portion of trees in a forest which forms the uppermost canopy.
OVERSTORY REMOVAL	Removal of 80 percent or more of the overstory to increase the production of grass and browse for utilization by livestock and wildlife, or to control insects and disease, etc.

P

PARTICULATES	Small particles which are suspended in the air and generally are considered pollutants.
PATCH CUT	Patch cuts are small clearcuts, generally of 1 to 20 acres. Patch cuts are often employed to accomplish wildlife, visual or aspen management objectives. A silvicultural system used to harvest mature trees in one cut for the purpose of regenerating a new even-aged stand. It involves the removal of all standing trees over a given area of land in a single cut.
PATENTED MINING CLAIM	A mining claim to which the Federal Government has granted the claimant all surface and some or all mineral rights. Patented mining claims are private and may be sold or used for other activities.
PERENIAL WATRCOURSE	Duration of flow is nearly continuous, flowing continuously nine years out of ten. Same as a live stream.
PERMITTED GRAZING	Use of National Forest range allotment under the terms of a grazing permit.
PERSONAL USE	Normally used to describe the type of permit issued for removal of wood products (firewood, posts, latillas, and Christmas trees) from National Forest land when the product is for home use and not to be resold for profit.
PERSONS AT ONE TIME (PAOT)	A recreation-capacity measurement indicating the number of people that can comfortably occupy a site at one time.
PESTICIDE	Any organic or inorganic preparation used to control populations of injurious organisms, plant or animal.
PLANNING HORIZON	The 200 year period for which timber growth and yield is modeled in order to assure achievement of long-term sustained yield.

---------- Glossary ----------

PLANNING PERIOD	A one decade time interval within the planning horizon this used to show incremental changes in yields, costs, effects, and benefits.
PLANNING QUESTIONS	A major policy question of long range significance, derived from the public issues and management concerns, to be addressed when selecting among alternative Forest plans.
PLANNING RECORDS	A system that records decisions and activites that result from the process of developing a forest plan or revision.
POLE TIMBER	A size class definition of trees 5.0 to 8.9 inches at DBH, 20 to 60 years old. Trees from which pole products are produced.
POTHUNTING	Collecting artifacts for personal use or to soil for profit. An illegal and unprofessional activity.
PRECOMMERCIAL THINNING	The selective felling, and removal of trees under 5 inches DBH in a young stand to accelerate the growth of the remaining trees, maintain a specific stand density and improve their vigor and quality.
PREPARATORY CUT	Removal of trees near the end of rotation to open the canopy, enlarge the crowns of seed bearers and improve the conditions for seed production and natural regeneration, as typically in sheltrwood systems.
PRESCRIBED FIRE	A wildland fire burning under preplanned, specified conditions to accomplish specific planned objectives. It may result from either a planned or unplanned ignition.
PRESENT NET VALUE (PNV)	“The difference between the discounted value (benefits) of all outputs to which monetary values or established market prices are assigned and the total discounted costs of managing the planning area.” [36 CFR 219.3]
PRESUPPRESSION	Activities required in advance of a fire to ensure effectiveness suppression action including recruiting and training fire forces, planning and organizing attack methods, procuring and maintaining fire equipment, and maintaining structural improvements necessary for the fire program.
PUBLIC ACCESS	Usually refers to a road or trail routs over which a public agency claims a right-of-way available for public use.
PUBLIC ISSUE	A subject or question of widespread public interest relating to the management of Forest lands identified through public participation.
PURCHASER CREDIT	Methd of payment for road work done by timber sale contractors, whereby the value of the work done is subtracted from the amount due for purchase of timber products by the contractor.

---------- Glossary ----------

R

RANGE MANAGEMENT INFORMATION SYSTEM (RAMIS)	A computerized database for storage and retrieval of information concerning range administration.
RANGE ALLOTMENT	An area operated under one plan of management designated for the use of a prescribed number of livestock owned by one or more permittees. It is the basic land unit used to facilitate management of the range resource on National Forest lands.
RANGE CONDITION	The state or health of the range vegetation and soil to produce a stable iotic community based on the composition, density, and vigor of the vegetation and the physical characteristics of the soil. Condition is expressed as excellent, good, fair, poor or very poor, with poor and very poor being in unsatisfactory condition. Excellent, good, and fair are considered satisfactory condition.
RANGE IMPROVEMENT	Any stucture or nonstructural land treatment to facilitate management of rangelands or livestock.
RANGELAND	Land where grasses, grass-like plants, forbs, or shrubs suitable for livestock grazing and browning are produced in abundance.
RANGELAND INVENTORY	(V) The systematic acquisition and analysis of resource information needed for planning and managing rangeland. (N) The information acqured through range inventory.
RANGE MANAGEMENT	Level A – Livestock grazing is eliminate or restricted to situations where it will meet other resource objectives, such as fuel hazard reduction in recreation areas. Areas managed under Level A are not counted in determining livestock foragecapacities. Level B – Livestock grazing is very limited. Management is generally accomplished by moving livestock from one place to another. Capacity and actual use are kept in balance by removing or adding livestock. There is very litle structural improvement work done, such as fences or water development, and no forage improvement work, such as seeding. Level C – Livestock grazing is controlled trougstrctural improvements ad by physically moving livestock. Long-term capacities are balanced with use by adjusting numbers of livestock. Any forage improvement is generally the result of meeting other resource objectives, such as wildlife habitat improvement.

Level D – Areas under Level D management are managed intensively for livestock grazing within an overall multiple-use concept. Any structural or nonstructural (forage) improvement technique may be used as long as it fits with the natural environment. Reasonable and approved management techniques are applied to sustain capacity and use at high levels.

Level E – Level E management is applied to areas to achieve the maximum livestock production that the land can support. Any management technique can be applied as long as basic watershed values are protected. Some management activities, such as irrigating or large scale planting of non-native grass species, may change the natural character of the land.

RANGE CAPACITY LEVELS — Levels are described as follows:

No Allowable Capacity – Lands that areincapable of being grazed by domestic livestock under reasonable management goals. Examples include areas under natural conditions that are not capable of producing vegetation, soils that are not capable of producing more vegetation than is needed to prevent excessive erosion rates, and slopes over 40 percent.

Potential Capacity – Lands not undergoing accelerated erosion but requiring access, water developments, or other improvements to bring them up to full capacity.

Full Capacity – Lands that are presently stable because effective ground cover is holding soil loss to an acceptable level and are, therefore, suited for grazing and can support livestock operation.

RANGER DISTRICT — Administrative subdivisions of the Forest supervised by a District Ranger who reports to the Forest Supervisor.

RECEIPT SHARES — The portion of receipts derived from Forest Service resource management that is distributed to state and county governments, such as the Forest Service 25 percent fund payments.

RECONSTRUCTION — Road or trail construction activities including relocation which take place on an existing road or trail and raise the standard of the road or trail.

RECORD OF DECISION — A document, separate from, but associated with an environmental impact statement, that publicly and officially discloses the responsible official's decision on the proposed action.

RECREATION CAPACITY (PRACTICAL MAXIMUM) — The number of people that can use a recreational opportunity setting at any one time without substantially diminishing the quality of the experience sought after, or the physical aspects of the area.

---------- Glossary ----------

RECREATION INFORMATION MANAGEMENT (RIM)	A computerized system for keeping track of many of the elements of the Forest recreation program. Data bases and reports cover such areas as facility type, location and capacity. Other information includes facility condition and maintenance needs as well as annual use by area, facility and activity type.
RECREATION OPPORTUNITY SPECTRUM (ROS)	A land classification system that categorizes National Forest land into six classes, each class being defined by its setting and by the probable recreation experiences and activities it affords. The six classes in the spectrum are: primitive, semi-primitive nonmotorized, semi-primitive motorized, roaded natural, rural, and urban. The individual definitions follow. Primitive (P) – Characterized by an essentially unmodified environment, where trails may be present but structures are rare, and where the probability of isolation from the sights and sounds of people is high. Semi-Primitive Non-Motorized (SPNM) – Characterized by few and/or subtle modifications by people, and with a high probability of isolation from the sights and sounds of people. Semi-Primitive Motorized (SPM) – Characterized by moderately dominant alterations by people, with strong evidence of primitive roads or trails. Roaded Natural (RN) – Characterized by a predominantly natural environment with evidence of moderate permanent resource use. Evidence of sights and sounds of people is moderate, but in harmony with the natural environment. Opportunity exists for both social interaction and moderate isolation from sights and sounds of people. Rural (R) – Characterized by an area in which the sights and sounds of people are prevalent and the landscape has been considerably altered by the works of people. Urban (U) – Characterized by a natural setting dominated by people-made structures and the sights and sounds of people predominate.
RECREATION RESIDENCE (SUMMERHOME)	House or cabin permitted on Forest land for recreational use by the owner, but not as a primary residence.
RECREATION VISITOR DAY (RVD)	A unit for measuring recreation activities based on aggregates of 12 visitor hours. It may consist of one person for 12 hours, 12 persons for one hour or any equivalent combination of continuous or intermittent recreation use.

---------- Glossary ----------

REFORESTATION	The restocking of an area usually to produce timber, but also to protect watersheds, prevent erosion, and improve other resources. Natural reforestation includes site preparation to reduce competing vegetation and provide a mineral seed bed for seed provided by seed trees. Artificial reforestation is the planting of seedlings or seeds by hand or mechanical means and may include site preparation.
REGENERATION	1) The actual seedlings or saplings existing in a tree stand; or 2) The act of establishing young trees naturally or artificially.
REGENERATION CUTTING	The removal of trees to assist regeneration already present or to make regeneration of the stand possible.
REGION 3	The Southwestern Region administrative unit of the Forest Service consisting of all National Forests in New Mexico and Arizona plus four National Grasslands in Texas, Oklahoma and New Mexico.
REGIONAL FORESTER	The official responsible for administering a single Region and preparing a Regional Guide.
REGIONAL GUIDE	The document developed to meetthe requirements of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended , that guides all natural resource management activities and estblishes management standards and guidelines for the National Forest System lands of a given Region. It also disaggregates the RPA objectives assigned to the Region and to the Forests within that region.
RESEARCH NATURAL AREA (RNA)	An area in as near a natural condition as possible which exemplifies typical or unique vegetation and associatd biotic, soil, geologic, and aquatic features. This area is set aside to preserve a representative sample of an ecological community primarily for scientific and educational pruposes; commercial and general public use is not allowed.
RESOURCE ALLOCATION MODEL	A mathematical model using linear programming which will allocate land to prescriptions and schedule implemenation of those prescriptions simultaneously that meets the goals of the Forest.
REVEGETATION	The restablishment and development of a plan cover. This may take place naturally through the reproductive process of the existing flora or artificially by reforestation or range reseeding.
RIGHT-OF-WAY	Land authorized to be used or occupied for constructing, operating, maintaining and terminating a prioject or facility passing, over, upon, under, or through such land.
RIPARIAN AREA	An area usually found along the banks of streams or lakes and identified by the presence of vegetation that requires free or unbound water or conditions more moist than normally found in the area.
ROAD DENSITY	The number of miles of road per square mile in a land area.

---------- Glossary ----------

ROAD MAINTENANCE — Levels are described as follows:

Level 1: Road normally closed to vehicle traffic.
Level 2: Road open for limited passage of traffic but not normally suitable for passenger cars.
Level 3: Road open for public traffic including passenger cars, but may not be smooth or comforatble.
Level 4: Road suitable for all types of vehicles, generally smooth to travel and dust may be controlled.
Level 5: Road is smooth and dust free, and the surface is skid resistant, if paved.

ROTATION AGE — The planned number of years between the initial establishment of a crop of trees and their final harvest. The rotation age will vary according to geographic location, tree species, and management objectives.

ROUNDWOOD — Trees that are used without being milled (fence posts, telephone poles, pulpwood, etc.).

RPA NATIONAL ASSESSMENT — A document compiled by the Secretary of Agriculture every 10 years that contains facts and analysis to develop and guide public and private forest and rangeland policies and programs.

RPA NATIONAL PROGRAM — A document compiled by the Secretary of Agriculture every 5 years that outlines Forest Service programs for National Forest System management, cooperative assistance to States and private landowners, and research.

S

SALE SCHEDULE — "The quantity of timber planned for sale by time period from an area of suitable land covered by a forest plan. The first period, usually a decade, of the selected sale schedule provides the allowable sale quantiy. Future periods areshown to establish that long-term sustaied yield will be achieved and maintained." [36 CFR 219.3]

SALVAGE AND SANIATION HARVESTS — Removal of dead or dying trees resulting from insect and disease epidemics or wildfire.

SANTA FE NATIONAL FOREST — The administrative title of the National Forest lands administered by the Forest Service in Santa Fe, New Mexico. It includes the districts of Coyote, Cuba, Espanola, Jemez, Las Vegas, and Pecos."

SAPLING — A timber size class definition; trees 1.0 to 4.9 inches in DBH.

SATISFACTORY — Allotments were an approved allotment management plan has been initiated and satisfactory progress is being made toward achieving plan objectves. Range and watershed conditions are stable or improving, or in no case more than 20 percent overstocked. Range and watershed conditions are stable or improving.

---------- Glossary ----------

SAWTIMBER	Trees suitable in size and quality for logs that can be processed into lumber. For planning purposes on the Forest, trees with a nine-inch diameter were classified as mature sawtimber.
SCENIC RIVER	Wild and Scenic Rivers Act usuage. Those rivers or sections of rivers that are free of impoundments, with shorelines largely undeveloped, but accessible in places by roads.
SEDIMENT	Solid material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice and has come to rest on the earth's surface.
SEED CUT	Removal of mature trees near rotation age in a shelterwood harvest to permanently open the stand and prepare the site for regeneration from the seed trees left for that purpose.
SEEDLING	A timber size class definition; trees less than 1 inch in DBH.
SELECTION HARVEST	A system that removes trees individually in a scattered pattern from a large area each year. (1) Individual tree selection cutting involves the removal of selected trees of all size classes on an individual basis. Regeneration is established under the partial shade of the overstory canopy after each cut. (2) Group selection cutting involves the removal of selected trees of all size classes in groups of a fraction of an acre up to 2 to 3 acres in size. Regeneration occurs in the groups under conditions similar to those found in small clearcuts. Considered an uneven-aged management system.
SENSITIVE AREAS	Areas of high erosion hazard, areas that may be susceptible to compaction, or areas of unstable slopes.
SENSITIVITY LEVEL	As used in visual resource management; a particular degree or measure of viewer interest in the scenic qualities of the landscape. All roads, trails, use areas and water bodies are assigned a level: Level 1 – Highest Sensitivity; Level 2 – Average; or Level 3 – Lowest.
SERAL	A plant and animal community which is transitional in stage of succession. If left alone, the seral stage will pass, and another plant and animal community will replace it. Aspen represents a seral stage that would eventually be replaced by conifers. Disturbance of plant communities causes changes towards early seral stages, while a lack of disturbance allows changes toward latter seral stages.

SHELTERWOOD HARVEST	An even-aged regeneration system where the mature trees are removed in two or more cuts designed to establish a new crop with seed and protection provided by a portion of the existing stand. (1) The preparatory cut removes a portion of the mature trees and is intended to make the remaining trees more wind firm; preparatory cuts may be omitted where windfall is not a major concern. (2) The seed cut removes additional trees with the intent of allowing additional sunlight to reach the forest floor. The new trees become established following the seed cut. (3) The removal cut removes the last of the mature trees.
SILVICULTURAL SYSTEM	"A management process whereby forests are tended, harvested, and replaced, resulting in a forest of istinctive form. Systems are classified according to felling methods that remove the mature crop and provide for regeneration and according to the type of forest thereby produced." [36 CFR 219.3]
SILVICULTURE	That part of forestry dealing with the science and art of regenerating, establishing, caring for, and developing a stand of timber.
SITE CLASS	A measure of the relative productive capacity of a site for the crop or stand, based on volume or height that is attained or attainable at a given age. Measure is expressed as Site Class I (site index of 75 or greater). Site Class II (site index of 55 to 74), and Site Class III (site index of less than 55).
SITE INDEX	How tall the better trees in a stand are at 100 years old.
SITE PREPARATION	Preparation of the ground surface before planting or preparing a seedbed for natural regeneration; includes removal of unwanted vegetation, slash, stumps, and roots from a site.
SIZE CLASS	For the purpose of Forest planning, size class refers to the intervals of tree stem diameter used for classification of timber. Less than five-inch diameter = seedlings/sapling; five to nine-inch diameter = pole timber; and greater than nine-inch diameter = sawtimber.
SKID TRAIL	Travelway used to transport trees from the stump to the road.
SLASH	Debris left after logging, pruning, thinning, or debris resulting from windstorms. It includes logs, bark, branches, and stumps.
SMALL GAME	Birds and small mammals normally hunted or trapped.
SNAG	A standing dead tree larger than 10 inches in diameter at breast height. Snag recruitment is the preservation of suitable live trees near death for replacement of snags in the future or killing trees to create new snags.

---------- Glossary ----------

SOIL PRODUCTIVITY	The capacity of a soil to produce a specific crop under defined levels of management. It is generally dependent on available soil moisture, nutrients and length of growing season.
SPECIAL INTEREST AREAS (SIA's)	A land use classification to protect and, where appropriate, foster public use and enjoyment of areas with scenic, historical, geological, botanical, zoological, palentological or other special characteristics. An area managed to preserve important historic, cultural and natural aspects of our natonal heritage.
SPECIAL USE PERMITS	A perit issued under established laws and regulations to an individual, organizatn, or company for occupancy or use of National Forest land for some special purpose.
STAND	A plant community sufficiently uniform in cover type, age class, risk class, vigor, size class, and stocking class to be distinguishable from adjacent communities thus forming an individual management or silvicultural unit. Most commonly used when referring to forested areas.
STANDARD	A principle requiring a specific level of attainment, a rule to measure against.
STANDARD SERVICE LEVEL	A level of service in recreation areas which provides an optimal level of operation and maintenance to Condition Class 1. For developed sites this includes hazard removal, periodic patrol during high-use periods, and cleaning sites in accordance with the USDA publication, " Cleaning Recreation Sites". In dispersed areas, this includes periodic patrol and litter pick-up on high use trails and areas, monitoring of use, imposing user restrictions where appropriate and necessary, and minor repair of resource damage.
STANDARD STIPULATIONS	Constraints added to all mineral, oil, and gas leases to protect resources from unnecessary disturbance. Fire, erosion control, payment for damages, cattleguards, pollution, camp construction, plan of operation, environmental analysis, protection of threatened and endangered species, and cultural resources are covered.
STATE COMPREHENSIVE OUTDOOR RECREATION PLAN (SCORP)	Plan prepared at 5 year intervals by the State which identifies recreation supply and demand and recommends future development actions.
STATE HISTORIC PRESERVATION OFFICER (SHPO)	The state official responsible for consultation and assistance regarding the presence and significance of cultural resources on the Forest, efforts needed to locate and evaluate them, and methods to avoid or reduce project impacts to them.

STUDY EVALUATION UNIT	Study evaluation units are manageable units of investigation which can be used to guide the inventory, evaluation, and allocation of cultural resources. A study unit may be a geographic area (a drainage or mountain range), an administrative unit (a Wilderness Area), a class of cultural resources (field houses, shrine sites, CCC era structures, fire lookouts); a specific cultural group (Ute), a particular time period (Pueblo IV) or a particular research topic (spatial models, transition to sedentian.
STOCKING RATE	The actual number of animals, expressed in either animal units or animal unit months, on a specific area at a specific time.
STRUCTURAL (RANGE OR WILDLIFE) IMPROVEMENT	Improvement requiring construction or installation to improve the range, facilitate management, improve habitat, or control distribution and movement of animals.
SUITABLE FOREST LAND	Land for which technology is available that will ensure timber production without irreversible damage to soils, productivity, or watershed. There is reasonable assurance that such lands can be adequately restocked.
SUITABILITY	"The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices." [36 CFR 219.3]
SUPPRESSION (OF FIRE)	Any act taken to slow, stop, or extinguish a fire. Example of suppression activities include line construction, backfiring, and applying water or chemical fire retardants.
SUSTAINED YIELD	"The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the National Forest System without impairment of the productivity of the land." [36 CFR 219.3]

T

TARGETS	Quantifiable outputs that have been assigned as objectives.
TEMPORARY ROADS	Temporary roads are low-level roads constructed for a single purpose and short-term use. Once use of the road has been completed, it is obliterated, seeded, and the land it occupied is returned to production.
TERRESTRIAL ECOSYSTEM SURVEY	Systematic inventory based on the concept that within the landscape, there are naturally occurring ecosystems with unique sets of properties. These terrestrial ecosystems form a continum and can be rcognized at different levels in classification systems. The terrestrial ecosystem inventory is sometimes referred to as a "soil survey" in planning.

THERMAL COVER — Cover used by animals to reduce effects of weather.

THINNING — Cutting made in an immature stand to accelerate diameter growth and improve tree form.

THREATENED AND ENDANGERED SPECIES — Species identified by the Secretary of Interior in accordance with the Endangered Species Act of 1973, as amended.

Threatened Species – Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Endangered Species – Any species that is in danger of extinction throughout all or a significant portion of its range.

Candidate Species

1. A species listed in a Notice to Review or Proposal for Listing in the Federal Register. A Notice of Review is triggered by a petition to list a species. The public at large is asked for data on a species. After the data has been collected, a species is proposed for listing as threatened or endangered in the Federal Register. In either case, the species is a candidate species and is not subject to protection under the Endangered Species Act.

2. A species listed in the Fish and Wildlife Services's program advice is a candidate species.

3. A species proposed for listing but for which the decision to list is forestalled is a candidate species.

TIERING — Incorporating information constained in an EIS, such as the Forest Plan EIS, by reference in subsequent environmental documents.

TIMBER STAND IMPROVEMENT (TSI) — All intermediate cuttings made in an immature stand to accelerate diameter growth and improve the composition and condition.

TRACTOR LOGGING — Any logging method which uses a tractor as the motive power for transporting logs from the stumps to a collecting point.

TRAIL MAINTENANCE LEVELS — The extent of maintenance done on trails.

Level 1: Basic protection work to keep damage to a minimum and provide for user safety.
Level 2: Preservation maintenance used on long term trails to perpetuate the pathway.
Level 3: Highest level of trail maintenance and full spectrum of service.

TRAILHEAD — The parking, signing, and other facilities available at the terminus of a trail.

TRANSITORY RANGE	Land that is suitable for grazing use of a transitional nature over a period of time. For example, after a timber sale, grass may cover the area for a period of time before being replaced by trees or shrubs not suitable for forage.
TRAVELWAY	An unconstructed two-track road resulting from repeated cross-country travel.
TURKEY ROOST TREES	Turkeys prefer to roost in tall, mature ponderosa pine (16 to 42 inch DBH) with open crowns an dlarge horizontal branches.
TYPE CONVERSION	The conversion of the dominant vegetation in an area from forested to nonforested or from one tree species to another.

U

UNCLASSIFIED AREA	Refers to the classification on lands for the purpose of establishing utilitiy corridors. It is that land area not previously classified as an exclusion area, avoidance area, window or corridor.
UNDERSTORY	The trees and other woody species growing under a more or less continuous cover of branches and foliage of adjacent trees.
UNEVEN-AGED	"The application of a combination of actions needed to simultaneously maintain continuous high-forest cover, recurring regeneration of desirable species, and the orderly growth and development of trees of forest products. Cutting is usually regulated by specifying the number or proportion of trees of particular sizes to retain within each area, thereby maintaining a planned distribution of size classes. Cutting methods that develop and maintain uneven-aged stands are single-tree and group selection." [36 CFR 219.3]
UNIVERSAL SOIL LOSS EQUATION (USLE)	Erosion model that computes long-term average soil losses from sheet and rill erosion under specified conditions.
UNSATISFACTORY RANGE ALLOTMENTS	Allotments with management intensity of X. Stocking is at least 20 percent overstocked. Range and watershed conditions are deteriorating at a rate which will cause significant management changes and/or investments to correct.
UNSATISFACTORY WATERSHED CONDITION	The condition of the watershed, as measured by the quantity and quality of vegetative cover that is degrading with respect to the inherent potential of the soil or the hydrologic function.
USE SEASON	That period of time developed recreation sites are open for public use, with routine maintenance, cleanup, and operation on a scheduled basis.

---------- Glossary ----------

V

VEGETATIVE MANIPULATON	The change of one vegetation type to another. It can be done by a tractor, chemicals, or fire. Usually, this is done to increase forage for livestock or to benefit wildlife.
VERTICAL DIVERSITY	The diversity in an area that results from the complexity of the above ground structure of the vegetation.
VIABLE POPULATIONS	A wildlife population of sufficient size to maintain its existence over time in spite of normal fluctuations in population levels
VISITOR INFORMATION SERVICES (VIS)	A service provided to the public in which the public is supplied with information regarding opportunities or activities on National Forest Land.
VIS SITE	Visitor Information Service Site that provides interpretative information (directional, historical, statistical) located at Forest historical sites, overlook sites, or special interest areas.
VISUAL DISTANCE ZONES	Areas of landscapes denoted by specified distances from the observer. Used as a frame of reference in which to discuss landscape characteristics or activities of people. The three zones are foreground, middleground, and background.
VISUAL MANAGEMENT SYSTEM	Also referred to as “Landscape Management” or “Visual Resource Management”. The art and science of planning and administering the use of Forest lands in such ways that visual effects are maintained or improved. It is planning and designing visual aspects of multiple-use management.
VISUAL QUALITY OBJECTIVE (VQO)	A desired level of visual quality based on physical and sociological characteristics of an area. Refers to the degree of acceptable alterations of the characteristic landscape. Objectives used are: Preservation (P) – In general management activities are not detectable to the visitor. Retention (R) – In general management activities are not evident to the casual visitor. Partial Retention (PR) – In general management activities may be evident, but must be subordinate to the characteristic landscape. Modification (M) – In general management activity may dominate the characteristic landscape but must at the same time, utilize naturally established form, line, color, and texture. Man’s activities should apear as natural occurrences when viewed as middleground or background. Maximum Modification (MM) – Management activity may dominate the characterisitc landscape, but should appear as a natural occurance when viewed as background.

	Enhancement – A short-term management alternative which is done with the purpose of increasing positive visual variety, where little variety now exists. Rehabilitation – A short-term management alternative used to restore landscape containing undesirable visual impacts to a desired visual quality.
VISUAL RESOURCE	The composite of basic terrain, geological features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors.
VISUAL VARIETY CLASS	A classification system for visual landscape categories according to the variety and beauty of the visual features: “A” = distinctive landscapes, “B” = common landscapes, and “C” = minimal variety landscapes.

W

WATER YIELD	The amount of water produced annually on the Forest including streamflow and groundwatr recharge.
WATERSHED	The entire area that contributes water to a drainage or stream.
WATERSHED CONDITION	A description of the health of watershed, or portion thereof, in terms of the factors that affect hydrologic function and soil productivity.
WETLANDS	Areas with shallow standing water or seasonal to year-long saturated soils (including bogs, marshes, and wet meadows).
WILDLIFE AND FISH USER DAY (WFUD)	Wildlife and fish user day. A unit for measuring wildlife and fish user activities. One user day equals 12-hours of wildlife and fish-oriented recreation (one person for 12 hours, or 12 people for one hour, or any combination thereof). Includes both consumptive and non-consumptive uses of wildlife and fish.
WILDERNESS	Under the 1964 Wilderness Act, wilderness is undeveloped Federal land retaining its primeval chacter and influence without permanent improvements or human habitation. It is protected and managed so as to preserve its natural conditions which: 1. generally appear to have been affected primarilyby the forces of nature with the imprint of man’s activity substantially unnoticeable; 2. has outstanding opportunities for solitude or a primitive and confined type of recreation; 3. has atleast 5,000 acres or is of sufficient size to make practical its condition; and 4. may contain features of scientific, educational, scenic, or historical value, as well as ecologic and geologic interest.
WILDFIRE	Any wildland fire not designated and managed as a prescribed fire within an approved prescription.
WILDHORSE TERRITORY	The area historically used by a wildhorse herd as identified by the 1971 Wild and Free-roaming Horse and Burro Act.

WILDLIFE	All non-domesticated mammals, birds, fishes, reptiles, and amphibians living in a natural environment, including both game species and non-game species. Animals, or their progeny, which once were domestcated but escaped captivity and are running wild (i.e., feral animals), such as horses, burros, and hogs, are not considered wildlife.
WILDLING	A naturally grown seedling (small tree).
WILD RIVER	Wild and Scenic Rivers Act usage. Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted.
WINTER RANGE	The area occupied by an animal species during the winter.
WOODLAND	Pinyon and juniper forests usually growing on drier sites in the low elevations (less than 8,000 feet).

Z

ZOOTIC CLIMAX	The plant community so derived in which the dominant herbivore and the modified vegetation form a dynamic and interlocking system.

Acronym Index

AA – Analysis area
AEI – Aqatic Ecosystem Inventory
AMP – Allotment Management Plan
AMS – Analysis of the Management Situation (1990)
APHIS – Animal and Plant Health Inspection Service
ASO – Allowable Sale Quantity
AU – Animal Unit
AUM – Animal Unit Month

BCI – Biotic Condition Index
BD – Brush Disposal
BF – Board Feet
BLM – Bureau of Land Management
BMP – Best Management Practice

CEO – Council on Environmental Quality
CF – Cubic Feet
CFR – Code of Federal Regulations
CIP – Capital Investment Proposal
CMAI – Culmination of Mean Annual Increment

DBH – Diameter at Breast Height

ECOSIM – Ecosystem Component Simulation Models
EI – Ending Inventory
EIS – Environmental Impact Statement
EPA – Environmental Protection Agency
EVC – Existing Visual Condition

FA&O – Fire Administration & Other
FDR – Forest Development Road
FEIS – Final Environmental Imapct Statement
FLPMA – Forest Land Policy and Management Act (1976)
FSM – Forest Service Manual
FSH – Forest Service Handbook

GAWS – General Aquatic Wildlife System
GSL – Growing Stock Levels

ICO – Issues, Concerns and Opportunities
ID – Interdisciplinary
IPM – Integrated Pest Management
ISM – Integrated Stand Management

KGRA – Known Geothermal Resource Area

LAC – Limit of Acceptable Change
LLL – Land Line Location
LTSY – Long-Term Sustained Yield
LTSYC – Long-Term Sustained Yield Capacity
LWCF – Land & Water Conservation Fund (Act) (1964)

M – Modification
M – Thousand
MA – Management Area
MAR – Management Attainment Report
MAX – Maximum
MBF – Thousand Board Feet
MCF – Thousand Cubic Feet
MIN – Minimum
MM – Max Modification
MM – Million
MMBF – Million Board Feet
MMCF – Million Cubic Feet
MMR – Minimum Management Requirements

NDY – Non-Declining Yield
NDYC – Non-Declining Yield Constraint
NEPA – National Environmental Policy Act (1969)
NFMA – National Forest Management Act (1976)
NHPA – National Historic Preservation Act (1980)
NPB – Net Public Benefit

O&M – Operation & Management
ORV – Off-Road Vehicle

P – Preservation
P – Primitive
PAMARS – Program Accounting and Management Attainment Reporting System
PAOT – Persons At One Time
PNFP – Prescribed Natural Fire Plan
PNV – Present Net Value
PR – Partial Retention
PTSAR – Periodic Timber Sale Accomplishment Report
PU Studies – Production Utilization Studies
PVC – Present Value Costs

R – Retention
R – Rural
RAMIS – Range Analysis Management Information Systems
RDEIS – Revised Draft Environmental Impact Statement
RIM – Recreation Information Management
RN – Roaded Natural
RNA – Research Natural Area
ROS – Recreational Opportunity Spectrum
RO3WILD – Region 3 Wildlife Model
RPA – Forest and Rangeland Renewable Resources Planning Act (1974)
RVD – Recreational Visitor Days
RX's – Prescriptions

SCORP – State Comprehensive Outdoor Recreation Plan
SILVA – Silviculture (A Model)
SLUB – Sequential Lower and Upper Boundaries
SPM – Semi-Primitive Motorized
SPNM – Semi-Primitive Non-Motorized

T&E – Threatened and Endangered
TEA – Transactional Evidence Appraisal
TMIS – Timber Management Information System
TSI – Timber Stand Improvement

U – Urban

VAC – Visual Absorbtion Capacity
VIS – Visitor Information System
VMS – Visual Management System
VQO – Visual Quality Objectives

WFUD – Wildlife and Fisheries User Day

Activity Code Index

Primary Code	
A01	Recreation Planning
A02	Inventory
A03	Cultural Resource Evaluation and Assessments
A04	Cultural Resource Protection and Enhancement
A05	Facility and Site Reconstruction
A06	Facility and Site Construction
A07	Facility and Site Management
A08	Use Administration
A10	Trail Reconstruction
A11	Trail Construction
A12	Trail System Maintenance and Operation
A13	Visual Resource Improvement
A14	Visual Resource Monitoring
A19	Forest Recreation Research
B01	Wilderness Planning
B02	Wilderness Inventory
B03	Wilderness Use Administration
B05	Wilderness Research
C01	Surveys, Planning, Prescriptions, Monitoring, Cooperation and Administration
C02	Non-Structural Habitat Improvement
C03	Structural Habitat Improvement
C04	Structural Habitat Maintenance
C14	Wildlife, Fish and Plant Habitat Research
D01	Range Resource Planning
D02	Range Resource Inventory
D03	Range Non-Structural Improvement
D04	Range Non-Structural Improvement Maintenance
D05	Range Structural Improvement New
D06	Range Structural Improvements Maintenance
D07	Range Administration and Management
D08	Ecosystems Descriptions and Inventories
D10	Range Research
D11	Cover Type Management
E00	Timber Resource Management Planning and Inventories
E01	Regeneration Harvest
E02	Intermediate Harvests and Other Changes
E03	Silvicultural Examination and Prescription
E04	Reforestation
E05	Timber Stand Improvement
E06	Timber Sale Preparation
E07	Timber Harvest Administration
E08	Nursery Management

F01	Inventory
F02	Planning
F03	Improvement
F04	Administration/Management
F05	Resource Inventory Reports
F07	Rights/Use Management
F08	Resource Improvement Maintenance
F09	Monitoring
G01	General Technical Inventory and Evaluation
G02	Site Specific Technical Investigations
G03	Processing of Exploration Proposals
G04	Processing of Lease Applications
G05	Processing of Site-Specific Development Proposals
G06	Administration of Operations
G07	Contest, Hearings, and Appeals
G08	Reserved and Outstanding Rights
J01	Special Use Management (Non-Recreation)
J02	Right-of-Way Grants for Roads and Trails
J03	Federal Energy Regulatory Commission License and Permits
J04	Withdrawals, Modifications and Revocations
J05	Land Status Maintenance
J06	Property Boundary Location
J07	Property Boundary and Corner Maintenance
J08	Native American Land Title Claims Management
J09	Other Land Title Claims Management
J10	Encroachment
J11	Landownership Planning
J12	Land Adjustment Planning
J13	Land Exchange
J14	Land Exchange – Cash Equalization
J15	Land Acquisition
J16	Land Transfers
J17	Land Sales, Grants and Selections
J18	Rights-of-Way Acquisition
J19	Rights-of-Way Cost Share Agreements
J22	Forest Level Planning
J29	Wild and Scenic Rivers Study (S&PF)
L01	Transportation System Planning & Inventory
L02	Arterial Road Preconstruction
L03	Arterial Road Construction Engineering
L04	Arterial Road Construction
L05	Arterial Road Reconstruction
L06	Collector Road Preconstruction
L07	Collector Road Construction Engineering
L08	Collector Road Construction
L09	Collector Road Reconstruction
L10	Local Road Preconstruction
L11	Local Road Construction Engineering
L12	Local Road Cosntruction
L13	Local Road Reconstruction

BLANK – SAME AS PAGE 229

L14	Timber Purchaser Road Construction
L15	Timber Road Construction Supplementation and Contribution
L16	Bridge and Major Culvert PreConstruction
L17	Bridge and Major Culvert Construction Engineering
L18	Bridge and Major Culvert Construction/Reconstruction
L19	Road Operation
L24	FA&O Construction/Reconstruction
L25	FA&O Facilities Maintenance
L28	Dam Administration and Management
L29	Timber Purchaser Road Reconstruction
L33	Radio System Planning
L34	Radio System Construction
L35	Radio System Operation and Maintenance
L36	Wideband System Planning
L37	Wideband System Construction
L38	Wideband System Operation and Maintenance
L39	Telephone System Planning
L40	Telephone System Construction
L41	Telephone System Operation and Maintenance
L42	Datacommunication System Planning
L43	Datacommunication System Construction
L44	Datacommunication System Operation and Maintenance
L46	Potable Water System Administration and Management
L47	Wastewater System Administration and Management
L48	solid Waste System Administration and Management
L49	Timber Purchaser Road Preconstruction Engineering
L50	Timber Purchaser Road Construction Engineering
P01	Fire Management Planning and Analysis
P02	Fire Prevention
P03	Fire Detection
P04	Primary Initial Attack Forces
P05	Secondary Attack Forces
P06	Fire Reinforcements
P07	Forest Fire Support and Facilitating Services
P08	Initial Attack Fire Suppression Action
P09	Escaped Fire Suppression
P10	Fuels Management Inventory
P11	Treatment of Activity Fuels
P12	Treatment of Natural Fuels
P13	Fuelbreak Construction
P14	Fuel Treatment Area Maintenance
P24	Law Enforcement
P25	Cooperative Law Enforcement
P26	Search and Rescue
P27	Cooperative search and Rescue
P37	Forest Insect & Disease Research
T01	Line Management
T02	Program Support

Page 232 is blank.

Appendix B
Analysis Area Descriptions

ANALYSIS AREAS

Analysis areas are the land units used by the Forest to assign acreage to specific uses and track the outputs and costs through time. The planning model allocates prescriptions to land areas that are represented in the planning process as analysis areas.

Several types of analysis areas were used in the analysis for the Santa Fe National Forest. The first category encompasses tentatively suitable timber. The tentatively suitable timber is divided into 31 analysis areas on the basis of existing condition class, percent slope and site productivity index. The tentatively suitable timber analysis areas are:

Analysis Area Code	Analysis Area Description	Slope	Site Index	Acres
18A	Ponderosa pine, mature sawtimber	under 40%	II	5,976
18B	Ponderosa pine, immature sawtimber	under 40%	II	44,901
18C	Ponderosa pine, immature poles	under 40%	II	4,913
18D	Ponderosa pine, seeds and saps and inadequately stocked	under 40%	II	1,056
19A	Ponderosa pine, mature sawtimber	under 40%	I	7,447
19B	Ponderosa pine, immature sawtimber	under 40%	I	68,085
19C	Ponderosa pine, immature poles	under 40%	I	8,079
19D	Ponderosa pine, seeds and saps and inadequately stocked	under 40%	I	5,091
20A	Ponderosa pine, mature sawtimber	under 40%	III	7,645
20B	Ponderosa pine, immature sawtimber	under 40%	III	18,465
20D	Ponderosa pine, seeds and saps and inadequately stocked	under 40%	III	1,126
22A	Ponderosa pine, mature sawtimber	over 40%		10,824
22B	Ponderosa pine, immature sawtimber	over 40%		21,469
22D	Ponderosa pine, seeds and saps and inadequately stocked	over 40%		2,177
23A	Mixed conifer, mature sawtimber	under 40%		19,413
23B	Mixed conifer, immature sawtimber	under 40%		78,833
23D	Mixed conifer, seeds and saps and inadequately stocked	under 40%		4,033
24A	Mixed conifer, mature sawtimber	over 40%		41,799
24B	Mixed conifer, immature sawtimber	over 40%		69,317
24D	Mixed conifer, seeds and saps and inadequately stocked	over 40%		6,024
25A	Spruce, mature sawtimber	under 40%		16,917
25B	Spruce, immature poles	under 40%		2,993
25C	Spruce, immature sawtimber	under 40%		11,050
25D	Spruce, seeds and saps and inadequately stocked	under 40%		2,890
26A	Spruce, mature sawtimber	over 40%		17,452
26B	Spruce, immature sawtimber	over 40%		11,110
26C	Spruce, immature poles	over 40%		3,792

Appendix D

STANDARDS AND GUIDELINES FOR MANAGEMENT OF MEXICAN SPOTTED OWL, NOTHERN GOSHAWK, AND LIVESTOCK GRAZING

MEXICAN SPOTTED OWL

Standards: Provide three levels of habitat management – protected, restricted, and other forest and woodland types to achieve a diversity of habitat conditions across the landscape.

Protected areas include delineated protected activity centers; mixed conifer and pine-oak forests with slopes greater than 40% where timber harvest has not occurred in the last 20 years; and reserved lands which include wilderness, research natural areas, wild and scenic rivers, and congressionally recognized wilderness study areas.

Restricted areas include all mixed-conifer, pine-oak, and riparian forests outside of protected areas.

Other forest and woodland types include all ponderosa pine, spruce-fir, woodland, and aspen forests outside protected and restricted areas.

Survey all potential spotted owl areas including protected, restricted, and other forest and woodland types within an analysis area plus the area ½ mile beyond the perimeter of the proposed treatment area.

Establish a protected activity center at all Mexican spotted owl sites located during surveys and all management territories established since 1989.

Allow no timber harvest except for fuelwood and fire risk abatement in established protected activity centers. For protected activity centers destroyed by fire, windstorm, or other natural disaster, salvage timber harvest, or declassification may be allowed after evaluation on a case-by-case basis in consultation with US Fish and Wildlife Service.

Allow no timber harvest except for fire risk abatement in mixed conifer and pine-oak forests on slopes greater than 40% where timber harvest has not occurred in the last 20 years.

Limit human activity in protected activity center during the breeding season.

In protected and restricted areas, when activities conducted in conformance with these standards and guidelines may adversely affect other threatened, endangered, or sensitive species or may conflict with other established recovery plans or conservation agreements; consult with US Fish and Wildlife Service to resolve the conflict.

Monitor changes in owl populations and habitat needed for delisting.

Guidelines:

A. GENERAL

Conduct surveys following Region 3 survey protocol.

Breeding season is March 1 to August 31.

B. PROTECTED AREAS

Protected Activity Centers

Delineate an area of not less than 600 acres around the activity center using boundaries of known habitat polygons and/or topographic features. Written justification for boundary delineation should be provided.

The Protected Activity Center boundary should enclose the best possible owl habitat configured in as compact a unit as possible, with the nest or activity center located near the center.

The activity center is defined as the nest site. In the absence of a known nest, the activity center should be defined as a roost grove commonly used during breeding. In the absence of a known nest or roost, the activity center should be defined as the best nest/roost habitat.

Protected Activity Center boundaries should not overlap.

Submit protected activity center maps and descriptions to the recovery unit working group for comment as soon as possible after completion of surveys.

Road or trail building in protected activity centers should be avoided but may be permitted on a case-by-case basis for pressing management reasons.

Generally allow continuation of the level of recreation activities that was occurring prior to listing.

Require bird guides to apply for and obtain a special use permit. A condition of the permit shall be that they obtain a sub-permit under the U.S. Fish and Wildlife Service Master endangered species permit. The permit should stipulate the sites, dates, number of visits and maximum group size permissible.

Harvest fuelwood when it can be done in such a way that effects on the owl are minimized. Manage within the following limitations to minimize effects on the owl.

- Retain key forest species such as oak.
- Retain key habitat components such as snags and large downed logs.
- Harvest conifers less than 9 inches in diameter only within those protected activity centers treated to abate fire risk as described below.

Treat fuel accumulations to abate fire risk.

- Select for treatment 10% of the protected activity centers where nest sites are known in each recovery unit having high fire risk conditions. Also select another 10% of the protected activity centers where nest sites are known as a paired sample to serve as control areas.
- Designate a 100 acre “no treatment” area around the known nest site of each selected protected activity center. Habitat in the no treatment area should be as similar as possible in structure and composition as that found in the activity center.
- Use combinations of thinning trees less than 9 inches in diameter, mechanical fuel treatment and prescribed fire to abate fire risk in the remainder of the selected protected activity center outside the 100 acre “no treatment” area.
- Retain woody debris larger than 12 inches in diameter, snags, clumps of broad-leafed woody vegetation, and hardwood trees larger than 10 inches in diameter at the root collar.
- Select and treat additional protected activity centers in 10% increments if monitoring of the initial sample shows there were no negative impacts or there were negative impacts which can be mitigated by modifying treatment methods.
- Use light prescribed burns in non-selected protected activity centers on a case-by-case basis. Burning should avoid a 100 acre “no treatment” area around the activity center. Large woody debris, snags, clumps of broad-leafed woody vegetation should be retained and hardwood trees larger than 10 inches diameter at the root collar.
- Pre and post treatment monitoring should be conducted in all protected activity centers treated for fire risk abatement. (See monitoring guidelines)

Steep Slopes (Mixed conifer and pine-oak forests outside protected activity centers with slopes greater than 40% that have not been logged within the past 20 years)

No Seasonal restrictions apply.
Treat fuel accumulations to abate fire risk.

- Use combinations of thinning trees less than 9 inches in diameter, mechanical fuel removal, and prescribed fire.
- Retain woody debris larger than 12 inches in diameter, snags, clumps of broad-leafed woody vegetation, and hardwood trees larger than 10 inches in diameter at the root collar.
- Pre and post treatment monitoring should occur within all steep slopes treated for fire risk abatement. (See monitoring guidelines)

Reserved Lands (Wilderness, Research Natural Areas, Wild and Scenic Rivers, and Congressionally Recognized Wilderness Study Areas)

Allow prescribed fire where appropriate.

C. RESTRICTED AREAS (Mixed conifer, pine-oak, and riparian forests)

Mixed Conifer and Pine-oak Forests (See glossary definition)

Manage to ensure a sustained level of owl nest/roost habitat well distributed across the landscape. Create replacement owl nest/roost habitat where appropriate while providing a diversity of stand conditions across the landscape to ensure habitat for a diversity of prey species.

The following table displays the minimum percentage of restricted area which should be managed to have nest/roost characteristics. The minimum mixed conifer restricted area includes 10% at 170 basal area and an additional amount of area at 150 basal area. The additional area of 150 basal area is +10% in BR-E and +15% in all other recovery units. The variables are for stand averages and are minimum threshold values and must be met simultaneously. In project design, no stands simultaneously meeting or exceeding the minimum threshold values should be reduced below the threshold values unless a district-wide or larger landscape analysis of restricted areas shows that there is a surplus of restricted area acres simultaneously meeting the threshold values. Management should be designed to create minimum threshold conditions on project areas where there is a deficit of stands simultaneously meeting minimum threshold conditions unless the district-wide or larger landscape analysis shows there is a surplus.

VARIABLE	MC ALL RU	MC BR-E RU	MC OTHER RU	PINE-OAK
Restricted area %	10%	+10%	+15%	10%
Stand Averages for: Basal Area	170	150	150	150
18 inch + trees/ac	20	20	20	20
Oak basal area	NA	NA	NA	20
Percent total existing stand density index by size class:				
12-18"	10	10	10	15
18-24"	10	10	10	15
24+"	10	10	10	15

Attempt to mimic natural disturbance patterns by incorporating natural variation, such as irregular tree spacing and various patch sizes, into management prescriptions.

Maintain all species of native trees in the landscape including early seral species.

Allow natural canopy gap processes to occur, thus producing horizontal variation in stand structure.

Emphasize uneven-aged management systems. However, both even-aged and uneven-aged systems may be used where appropriate to provide variation in existing stand structure and species diversity. Existing stand conditions will determine which system is appropriate.

Extend rotation ages for even-aged stands to greater than 200 years. Silvicultural prescriptions should explicitly state when vegetative manipulation will cease until rotation age is reached.

Save all trees greater than 24 inches dbh.

In pine-oak forests, retain existing large oaks and promote growth of additional large oaks.

Encourage prescribed and prescribes natural fire to reduce hazardous fuel accumulation. Thinning from below may be desirable or necessary before burning to reduce ladder fuels and the risk of crown fire.

Retain substantive amounts of key habitat components:

- Snags 18 inches in diameter and larger
- Down logs over 12 inches midpoint diameter
- Hardwoods for retention, recruitment, and replacement of large hardwoods

Riparian Areas

Emphasize maintenance and restoration of healthy riparian ecosystems through conformance with forest plan riparian standards and guidelines. Management strategies should move degraded riparian vegetation toward good condition as soon as possible. Damage to riparian vegetation, stream banks, and channels should be prevented.

Domestic Livestock Grazing

Implement forest plan forage utilization standards and guidelines to maintain owl prey availability, maintain potential for beneficial fire while inhibiting potential destructive fire, maintain and restore riparian ecosystems, and promote development of owl habitat. Strive to attain good to excellent range conditions.

Old Growth

Except where other wise noted, implement forest plan old growth standards and guidelines to maintain and promote development of owl habitat.

D. OTHER FOREST AND WOODLAND TYPES

Apply ecosystem approaches to manage for landscape diversity mimicking natural disturbance patterns, incorporating natural variation in stand conditions and retaining special features such as snags and large trees, utilizing appropriate fires, and retention of existing old growth in accordance with forest plan old growth standards and guidelines.

MONITORING GUIDELINES

Monitoring and evaluation should be collaboratively planned and coordinated with involvement from each national forest, USFWS Ecological Services Field Office, USFWS Regional Office, USFS Regional Office, Rocky Mountain Research Station, recovery team, and recovery unit working groups.

Population monitoring should be a collaborative effort with participation of all appropriate resource agencies.

Habitat monitoring of gross habitat changes should be a collaborative effort of all appropriate resource agencies.

Habitat monitoring of treatment effects (pre and post treatment) should be done by the agency conducting the treatment.

Prepare an annual monitoring and evaluation report covering all levels of monitoring done in the previous year. The annual report should be forwarded to the Regional Forester with copies provided to the recovery unit working groups, USFWS Ecological Services field offices, and the USFWS Regional Office.

Track gross changes in acres of owl habitat resulting from natural and human caused disturbances. Acreage changes in vegetation composition, structure, and density should be tracked, evaluated, and reported. Remote sensing techniques should provide an adequate level of accuracy.

In protected and restricted areas where silvicultural or fire abatement treatments are planned, monitor treated stands pre and post treatment to determine changes and trajectories in fuel levels; snag basal areas; live tree basal areas; volume of down logs over 12 inches in diameter; and basal area of hardwood trees over 10 inches in diameter at the root crown.

NORTHERN GOSHAWK

Applicability: The northern goshawk standards and guidelines apply to the forest and woodland communities described below that are outside of Mexican spotted owl protected and restricted areas. Within Mexican spotted owl protected and restricted areas, the Mexican spotted owl standards and guidelines take precedence over the northern goshawk standards and guidelines. One or the other set of standards and guidelines apply to all forest and woodland communities but the Mexican spotted owl standards always take precedence in areas of overlap.

Standards: Survey the management analysis area prior to habitat modifying activities including a ½ mile beyond the boundary.

Establish, and delineate on a map, a post-fledgling family area that includes six nesting areas per pair of nesting goshawks for known nest sites, old nest sites, areas where historical data indicates goshawks have nested there in the past, and where goshawks have been repeatedly sighted over a two year or greater time period but no nest sites have been located.

Manage for uneven-age stand conditions for live trees and retain live reserve trees, snags, downed logs, and woody debris levels through out woodland, ponderosa pine, mixed conifer and spruce-fir forest cover types. Manage for old age trees such that as much old forest structure as possible is sustained over time across the landscape. Sustain a mosaic of vegetation densities (overstory and understory), age classes and species composition across the landscape. Provide foods and cover for goshawk prey.

Limit human activity in nesting areas during the breeding season.

Manage the ground surface layer to maintain satisfactory soil conditions i.e. to minimize soil compaction; and to maintain hydrologic and nutrient cycles.

When activities conducted in conformance with these standards and guidelines may adversely affect other threatened, endangered, or sensitive species or may conflict with other established recovery plans or conservation agreements; consult with US Fish and Wildlife Service to resolve the conflict.

Within the ranges of the Kaibab pincushion cactus, Pediocactus paradinei, and the Arizona leather-flower, Clematis hirsutissima arizonica, management activities needed for the conservation of these two species that may conflict with northern goshawk standards and guidelines will be exempt from the conflicting northern goshawk standards and guidelines until conservation strategies or recovery plans (if listed) are developed for the two species.

Guidelines:

General

Emphasize maintenance and restoration of healthy riparian ecosystems through conformance with forest plan riparian standards and guidelines. Management strategies should restore degraded riparian areas to good condition as soon as possible. Damage to riparian vegetation, stream banks, and channels should be prevented.

Refer to USDA Forest Service General Technical Report RM-217 entitled “Management Recommendations for the Northern Goshawk in the Southwestern United States” for scientific information on goshawk ecology and management which provide the basis for the management guidelines. Supplemental information on goshawk ecology and management may be found in “The Northern Goshawk: Ecology and Management” published by the Cooper Ornithological Society as Studies in Avian Biology No. 16. In woodland forest cover types, use empirical data to determine desired habitat conditions.

Inventory

Use the R3 Survey protocol to get complete coverage of the management analysis area (Kennedy and Stahlecker 1993, as modified by Joy, Reynolds, and Leslie 1994). Management analysis areas should be entire ecosystem management areas if possible.

Complete at least one year of survey, but two years of survey should be done to verify questionable sightings, unconfirmed nest sites, etc. If nesting goshawks are found during the first year of inventory, a second year of inventory is not needed in that territory.

For areas where complete inventories cannot be done, use aerial photographs to locate vegetative structural stages (VSS) 4-6 within the project area and inventory just those sites for goshawk nest areas using R3 inventory protocol. All un-inventoried areas (VSS 1-3) will be managed to post-fledgling family area (PFA) specifications while in that stage. If, while using this inventory option, evidence suggests goshawks are present (such as finding plucking perches or molted goshawk feathers) conduct a complete inventory as outlined above.

If forests have goshawks commonly nesting in stands classified as VSS 1-3, use the complete inventory methods for those areas. There may be situations where an area is classified as a VSS 3, based on the predominant VSS class, but in actuality a combination of VSS 4 & 5 predominate the area. For those situations, use the complete inventory methods.

Home Range Establishment

Post-fledgling family areas (PFA) will be approximately 600 acres in size. Post-fledgling family areas will include the nest sites and consist of the habitat most likely to be used by the fledglings during their early development.

Establish a minimum of three nest areas and three replacement nest areas per Post-fledgling family area. The nest areas and replacement nest areas should be approximately 30 acres in size. A minimum total of 180 acres of nest areas should be identified within each post-fledgling family area.

Nest site selection will be based first on using active nest sites followed by the most recently used historical nest areas. When possible, all historical nest areas should be maintained.

Manage for nest replacement sites to attain sufficient quality and size to replace the three suitable nest sites.

Management Scale

Distribution of habitat structures (tree size and age classes, tree groups of different densities, snags, dead and down woody material, etc.) should be evaluated at the ecosystem management area level, at the mid-scale such as drainage, and at the small scale of site.

Vegetation Management

Landscapes outside Goshawk post-fledgling family areas

General: The distribution of vegetation structural stages for ponderosa pine, mixed conifer and spruce-fir forests is 10% grass/forb/shrub (VSS1), 10% seedling-sapling (VSS2), 20% young forest (VSS3), 20% mid-aged forest (VSS4), 20% mature forest (VSS5), 20% old forest (VSS6). NOTE: The specified percentages are a guide and actual percentages are expected to vary + or – up to 3%.

The distribution of VSS, tree density, and tree age are a product of site quality in the ecosystem management area. Use site quality to guide in the distribution of VSS, tree density and tree ages. Use site quality to identify and manage dispersal PFA and nest habitat at 2 – 2.5 mile spacing across the landscape.

Snags are 18” or larger DBH and 30 feet or larger in height, downed logs are 12 inches in diameter and at least 8 feet long, woody debris is 3 inches or larger on the forest floor, canopy cover is measured with vertical crown projection on average across the landscape.

The order of preferred treatment for woody debris is: 1) prescribed burning, 2) lopping & scattering, 3) hand piling or machine grapple piling, 4) dozer piling.

Canopy Cover: Canopy cover guidelines apply only to mid-aged to old forest structural stages (VSS 4, VSS 5, and VSS 6) and not to grass/forb/shrub to young forest structural stages (VSS 1, VSS 2, and VSS 3).

Spruce-Fir: Canopy cover for mid-aged forest (VSS 4) should average 1/3 60% and 2/3 40%, mature forest (VSS 5) should average 60+ %, and old forest (VSS 6) should average 60+ %. Maximum opening size is 1 acre with a maximum width of 125 feet. Provide two groups of reserve trees per acre with six trees per group when opening size exceeds 0.5. Leave at least 3 snags, 5 downed logs, and 10-15 tons of woody debris per acre.

Mixed Conifer: Canopy cover for mid-aged forest (VSS 4) should average 1/3 60+ % and 2/3 40+ %, mature forest (VSS 5) should average 50+ %, and old forest (VSS 6) should average 60+ %. Maximum opening size is up to 4 acres with a maximum width of up to 200 feet. Retain one group of reserve trees per acre of 3-5 trees per group for openings greater than 1 acre in size. Leave at least 3 snags, 5 downed logs, and 10-15 tons of woody debris per acre.

Ponderosa Pine: Canopy Cover for mid-aged forest (VSS 4) should average 40+ %, mature forest (VSS 5) should average 40+ %, and old forest (VSS 6) should average 40+ %. Opening size is up to 4 acres with a maximum width of up to 200 feet. One group of reserve trees, 3-5 trees per group, will be left if the opening is greater than an acre in size. Leave at least 2 snags per acre, 3 downed logs per acre, and 5-7 tons of woody debris per acre.

Woodland: Manage for uneven age conditions to sustain a mosaic of vegetation densities (overstory and understory), age classes, and species composition well distributed across the landscape. Provide for reserve trees, snags, and down woody debris.

Within post-fledgling family area's

General: Provide for a healthy sustainable forest environment for the post-fledgling family needs of goshawks. The principle difference between within the post-fledgling family area and outside the post-fledgling family area is the higher canopy cover within the post-fledgling family area and smaller opening size within the post-fledgling family area. Vegetative Structural Stage distribution and structural conditions are the same within and outside the post-fledgling family area.

Spruce-fir: Canopy Cover for mid-aged forest (VSS 4) should average 60+ % and for mature (VSS 5) and old forest (VSS 6) should average 70+ %.

Mixed Conifer: Canopy Cover for mid-aged (VSS 4) to old forest (VSS 6) should average 60+ %.

Ponderosa Pine: Canopy Cover for mid-aged forest (VSS 4) should average 1/3 60+ % and 2/3 50+ %. Mature (VSS 5) and old forest (VSS6) should average 50+ %.

Woodland: Maintain existing canopy cover levels.

Within Nesting Areas

General: Provide unique nesting habitat conditions for goshawks. Important features include trees of mature to old age with high canopy cover.

The structure of the vegetation within nest areas is associated with the forest type, and tree age, size, and density, and the developmental history of the stand. Table 5 of RM-217 presents attributes required for goshawks on locations with "low" and "high" site productivity.

Preferred treatments to maintain the desired structure are to thin from below with non-uniform spacing and use of handtools and fire to reduce fuel loads. Lopping and scattering of thinning debris is preferred if prescribed fire cannot be used. Piling of debris should be limited.

When necessary, hand piling should be used to minimize compaction within piles and to minimize displacement and destruction of the forest floor and the herbaceous layer. Do not grapple or Dozer pile debris. Manage road densities at the lowest level possible to minimize disturbance in the nest area. Use small, permanent skid trails in lieu of roads for timber harvesting.

Spruce-fir, Mixed Conifer and Ponderosa Pine Cover Types: The nesting area contains only mature to old forest (VSS 5 & 6) having a canopy cover (measured vertically) between 50-70% with mid-aged VSS 6 trees 200-300 years old. Non-uniform spacing of trees and clupiness is desirable.

Woodland: Maintain existing canopy cover levels.

Human Disturbance

Limit human activities in or near nest sites and post-fledgling family area's during the breeding season so that goshawk reproductive success is not affected by human activities.

The breeding season extends from March 1 through September 30.

Low intensity ground fires are allowed at any time in all forested cover types, but high intensity crown fires are not acceptable in the post-fledgling family area or nest areas. Avoid burning the entire home range of a goshawk pair in a single year. For fires planned in the occupied nest area, a fire management plan should be prepared. The fire management plan should minimize the risk of goshawk abandonment while low intensity ground fire burns in the nesting area. Prescribed fire within nesting areas should be planned to move with prevailing winds away from the nest tree to minimize smoke and risk of crown fire developing and driving the adults off or consuming the nest tree.

Ground Surface Layer (All forested cover types)

Manage road densities at the lowest level possible. Where timber harvesting has been prescribed to achieve desired forest condition, use small, skid trails in lieu of roads.

Piling of debris should be limited. When necessary, hand or grapple piling should be used to minimize soil compaction within piles and to minimize forest floor and herbaceous layer displacement and destruction.

Limit dozer use for piling or scattering of logging debris so that the forest floor and herbaceous layer is not displaced or destroyed.

GRAZING MANAGEMENT

Standards: Forage use by grazing ungulate will be maintained at or above a condition which assures recovery and continued existence of threatened and endangered species.

Guidelines: Identify key ungulate forage monitoring areas. These key areas will normally be ¼ to 1 mile from water, located on productive soils on level to intermediate slopes, and be readily accessible for grazing. Size of the key forage monitoring areas could be 20 to 500 acres. In some situations such as high mountain meadows with perennial streams, key areas may be closer than ¼ mile from water and less than 20 acres. Within key forage monitoring areas, select appropriate key species to monitor average allowable use.

In consultation with US Fish and Wildlife Service, develop site-specific forage use levels. In the event that site-specific information is not available, average key species forage utilization in key forage monitoring areas by domestic livestock and wildlife should not exceed levels in the following table during the forage growing season.

ALLOWABLE USE GUIDE (percent)
BY RANGE CONDITION AND MANAGEMENT STRATEGY*

Range Condition **	Continuous Season-long Use	Defer 1 yr. in 2	Defer 1 yr. in 3	Defer 2 yr. in 3	Rest 1 yr. in 2	Rest 1 yr. in 3	Rest 2 yr. in 3 Rest over 2 yr. in 3
Very Poor	0	10	5	15	15	10	20
							25
Poor	10	20	15	20	20	15	30
							35
Fair	20	25	20	30	30	25	40
							45
Good	30	35	35	35	35	35	45
							50
Excellent	30	35	35	35	35	35	45
							50

*Site-specific data may show that the numbers in this table are substantially high or low. These numbers are purposefully conservative to assure protection in the event that site-specific data is not available.

**Range condition as evaluated and ranked by the Forest Service is a subjective expression of the status or health of the vegetation and soil relative to their combined potential to produce a sound and stable biotic community. Soundness and stability are evaluated relative to a standard that encompasses the composition, density, and vigor of the vegetation and physical characteristics of the soil.

The above table is based on composition and climatic conditions typical of sites below the Mogollon Rim. On sites with higher precipitation and vegetation similar to sites above the Mogollon Rim, allowable use for ranges in poor to excellent condition under deferment or rest strategies may be increased by 5%. The guidelines established in the above table are applicable only during the growing season for the identified key species within key areas. Allowable use for key forage species during the dormant season is not covered in the above table. These guidelines are to be applied in the absence of more specific guidelines currently established through site specific NEPA analysis for individual allotments.

Guidelines for allowable use for specific allotment(s) management or for grazing strategies not covered in the above table will vary on a site-specific basis when determined through the Integrated Resource Management (IRM) process.

Allowable use guidelines may be adjusted through the land management planning revision or amendment process. Guidelines established through this process to meet specific ecosystem objectives, will also employ the key species and key area concept and will be monitored in this manner.